



EZ Networking™

Cable/DSL Broadband Router

Built-in 4-Port 10/100 Mbps Switch

User Guide

SMC7004ABR V.2



Barricade™ Broadband Router User Guide

From SMC's Barricade line of Broadband Routers



September 2003

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ABOUT THE BARRICADE™ ROUTER

Congratulations on your purchase of the Barricade™ Broadband Router. SMC is proud to provide you with a powerful yet simple communication device for connecting your local area network (LAN) to the Internet. For those who want to surf the Internet at the lowest possible cost, this Broadband Router provides a convenient and powerful solution.

IMPORTANT INFORMATION!

This information is addressed to the DSL-Users without a flat rate contract.**

With your DSL-router you have received a device of high quality, which allows you fast and easy access to the Internet.

The factory default settings of this router have been done in a way to provide you with uninterrupted access and use of the Internet. With this background for cost reasons we recommend that you enter into a "flat rate" - contract with your DSL-line provider.

Why should you do that?

Please consider that a router, an entirely independent working device, does not switch off automatically when shutting off your PC!

You may trigger such an automatic shut-off by setting a so called "idle-time" (for details consult your manual at PPPoE or PPTP WAN access configuration). Depending at the set time (1 to 5 min) the router cuts the DSL-link when idle, indeed. But this still does not provide for 100% security.

About the Barricade™ Router

This disconnect only happens if there are no more open requests received from either the LAN or the WAN side (here this can be requests from the internet, i.e. initiated through the use of so called file sharing programs like eMule, eDonkey, etc.) that keep the router active.

In order to counter such incalculable activity and protect yourself from higher than expected on-line costs we therefore recommend again a flat-rate contract for your DSL-connection.

The only safe alternative: Pull the plug!

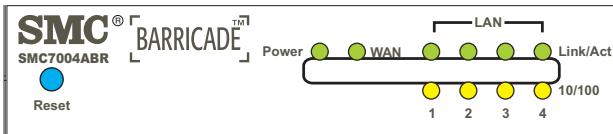
That is to disconnect your router from the mains.

Please feel free to contact our SMC-hotline if you have further questions.

** Flat-rate is an offer of your DSL-line provider, which gives you timely unlimited access to the Internet at a defined (flat-) rate.

LED Indicators

The SMC7004ABR includes comprehensive status LED indicators, as described in the following figure and table.



LED	Status	Description
Power (Green)	On	Barricade™ Router is receiving power.
WAN (Green)	On	The WAN port has established a valid network connection.
	Flashing	The WAN port is transmitting or receiving traffic.
Link/Act (Green)	On	The indicated LAN port has established a valid network connection.
	Flashing	The indicated LAN port is transmitting or receiving traffic.
10/100 (Amber)	On	The indicated LAN port is operating at 100 Mbps.
	Off	The indicated LAN port is operating at 10 Mbps.

Features and Benefits

- Internet connection to DSL or cable modem via a 10/100 Mbps WAN port
- Internet connection to ISDN TA or PSTN modem via an RS-232 console port
- Local network connection via 10/100 Mbps Ethernet ports
- Built-in print server for any client attached to the LAN
- DHCP for dynamic IP configuration, and DNS for domain name mapping
- Firewall with client privileges, hacker prevention, and NAT
- NAT also enables multi-user access with a single-user account, and virtual server functionality (providing protected access to Internet services such as web, FTP, mail and Telnet)
- Virtual Private Network support using PPTP, L2TP or IPSec pass-through
- User-definable application sensing tunnel supports applications requiring multiple connections
- Supports CHAP authentication protocol for dial-up identification
- Supports PPP dial-out connection
- Easy set up through a web browser on any operating system that supports TCP/IP
- Compatible with all popular Internet applications

INSTALLING THE ROUTER

Before installing the Barricade™ Broadband Router, verify that you have all the items listed under “Package Contents.” If any of the items are missing or damaged, contact your local SMC distributor. Also be sure that you have all the necessary cabling before installing the Barricade™ Router. After installing the Barricade™ Router, refer to the web-based configuration program in “Configuring the Barricade™ Router” on page 35 for information on configuring the router.

Package Contents

After unpacking the Barricade™ Broadband Router, check the contents of the box to be sure you have received the following components:

- Barricade™ Broadband Router
- Power adapter
- One CAT-5 Ethernet cable
- Four rubber feet
- Installation CD containing this User Guide and EZ 3-Click Installation Wizard

Immediately inform your dealer in the event of any incorrect, missing or damaged parts. If possible, please retain the carton and original packing materials in case there is a need to return the product.

Please register on SMC’s web site at www.smc.com or www.smc-europe.com. The Barricade™ Router is covered by a limited lifetime warranty.

Hardware Description

The Barricade™ Router can be connected to the Internet or to a remote site using its RJ-45 WAN port or RS-232 serial port. It can be connected directly to your PC or to a local area network using any of the Fast Ethernet LAN ports. It can also function as a print server.

Access speed to the Internet depends on your service type. Full-rate ADSL can provide up to 8 Mbps downstream and 640 Kbps upstream. G.lite (or splitterless) ADSL provides up to 1.5 Mbps downstream and 512 Kbps upstream. Cable modems can provide up to 36 Mbps downstream and 2 Mbps upstream. ISDN can provide up to 128 Kbps when using two bearer channels. PSTN analog connections can now run up to 56 Kbps. However, you should note that the actual rate provided by specific service providers may vary dramatically from these upper limits.

Although access speed to the Internet is determined by the modem type connected to your Barricade™ Router, data passing between devices connected to your local area network can run up to 100 Mbps over the Fast Ethernet ports.

The Barricade™ Router includes an LED display on the front panel for system power and port indications that simplifies installation and network troubleshooting. It also provides 4 RJ-45 LAN ports on the front panel, as well as one RJ-45 WAN port, one RS-232 serial port and one parallel printer port on the rear panel. Full-duplex communications allow data to be sent and received simultaneously, doubling the effective throughput.

Hardware Description

- 4 RJ-45 ports for connection to a 10BASE-T/100BASE-TX Ethernet Local Area Network (LAN). These ports can auto-negotiate the operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X (i.e., allowing these ports to be connected to any network device with straight-through cable). These ports can be connected directly to a PC or to a server equipped with an Ethernet network interface card, or to a networking device such as an Ethernet hub or switch.
- One RJ-45 port for connection to a DSL or cable modem (WAN). This port also auto-negotiates operating speed to 10/100 Mbps, the mode to half/full duplex, and the pin signals to MDI/MDI-X.
- One RS-232 serial port to connect to an ISDN Terminal Adapter (TA) or to a PSTN analog modem.
- One parallel printer port that can be connected to a printer. This printer can then be shared by any LAN users.

The following figure shows the components of the Barricade™ Router:

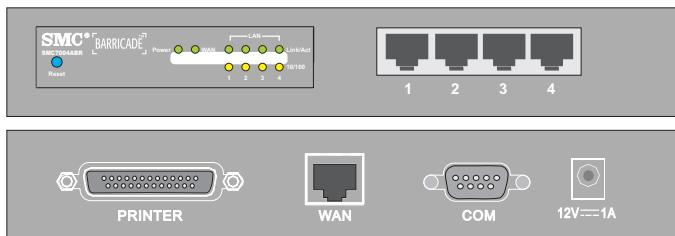


Figure 1. Front and Rear Panels

Installing the Router

Item	Description
Reset Button	Use this button to reset the power and restore the default factory settings.
LEDs	Power, WAN and LAN port status indicators. (See "LED Indicators" on page 3.)
LAN Ports	Fast Ethernet ports (RJ-45). Connect devices (such as a PC, hub or switch) on your local area network to these ports.
Printer Port	Parallel port (25-pins, D-type, female). Connect the shared printer to this port.
WAN Port	WAN port (RJ-45). Connect your cable modem, DSL modem, or an Ethernet router to this port.
COM Port	Serial port (9-pins, D-type, male). Connect your ISDN TA or 56K analog modem to this port.
Power Inlet	Connect the included power adapter to this inlet. Warning: Using the wrong type of power adapter may cause damage.

System Requirements

You must have an ISP that meets the following minimum requirements:

- Internet access from your local telephone company or Internet Service Provider (ISP) using a DSL modem, cable modem, ISDN TA, or PSTN analog modem. You may also have access over the telephone system to an analog modem at another site.
- A PC using a fixed IP address or dynamic IP address assigned via DHCP, as well as a gateway server address and DNS server address from your Internet Service Provider.
- A computer equipped with a 10 Mbps, 100 Mbps, or 10/100 Mbps Fast Ethernet card, or a USB-to-Ethernet converter.

Connect the System

- TCP/IP network protocol installed on each PC that needs to access the Internet.
- A Java-enabled web browser, such as Microsoft Internet Explorer 5.0 or above, or Netscape Communicator 4.0 or above installed on one PC at your site for configuring the Barricade™ Router.

Connect the System

The Barricade™ Router can be positioned at any convenient location in your office or home. No special wiring or cooling requirements are needed. You should, however comply with the following guidelines:

- Keep the Barricade™ Router away from any heating devices.
- Do not place the Barricade™ Router in a dusty or wet environment.

You should also remember to turn off the power, remove the power cord from the outlet, and keep your hands dry when you install the Barricade™ Router.

Basic Installation Procedure

1. Connect the LAN: You can connect the Barricade™ Router to your PC, or to a hub or switch. Run Ethernet cable from one of the LAN ports on the front of the Barricade™ Router to your computer's network adapter or to another network device.
2. Connect the WAN: Prepare an Ethernet cable for connecting the Barricade™ Router to a cable/DSL modem or Ethernet router. Prepare a serial cable for connecting the Barricade™ Router to an ISDN TA or PSTN modem.

Installing the Router

3. Connect your printer: Use standard parallel printer cable to connect your printer to the printer port on the Barricade™ Router.
4. Power on: Connect the power adapter to the Barricade™ Router.

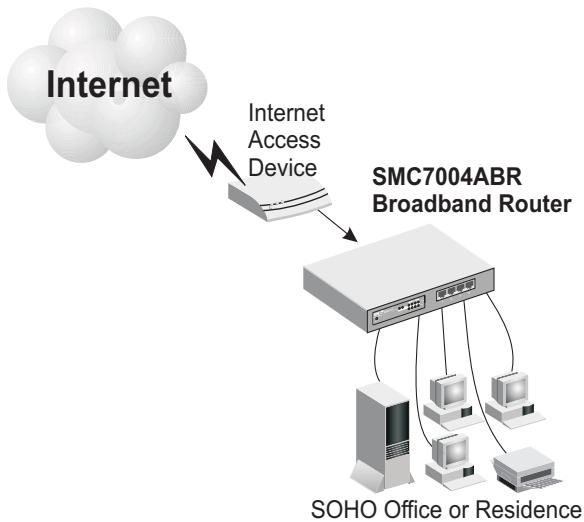


Figure 2. Connecting the Barricade™ Router

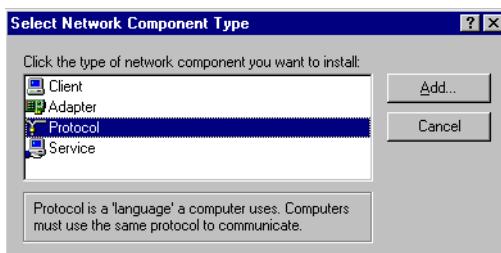
CONFIGURING CLIENT TCP/IP

If you have not previously installed the TCP/IP protocols on your client PCs, refer to the following section. If you need information on how to configure a TCP/IP address on a PC, refer to “Setting Up TCP/IP” on page 14.

Installing TCP/IP

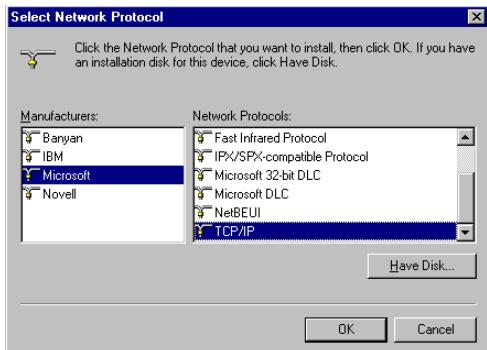
Windows 95/98/Me

1. Click Start/Settings/Control Panel.
2. Double-click the Network icon and select the Configuration tab in the Network window.
3. Click the Add button.
4. Double-click Protocol.



Configuring Client TCP/IP

5. Select Microsoft in the manufacturers list. Select TCP/IP in the Network Protocols list. Click the OK button to return to the Network window.



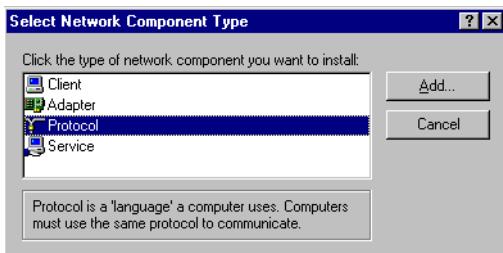
6. The TCP/IP protocol will be listed in the Network window. Click OK. The operating system may prompt you to restart your system. Click Yes and the computer will shut down and restart.

Windows 2000

1. Click the Start button and choose Settings, then click the Network and Dial-up Connections icon.
2. Double-click the Local Area Connection icon, and click the Properties button on the General tab.
3. Click the install... button.

Installing TCP/IP

4. Double-click Protocol.



5. Choose Internet Protocol (TCP/IP). Click the OK button to return to the Network window.



6. The TCP/IP protocol will be listed in the Network window. Click OK to complete the installation procedure.

Setting Up TCP/IP

To access the Internet through the Barricade™ Router, you must configure the network settings of the computers on your LAN to use the same IP subnet as the Barricade™ Router. The default network settings for the Barricade™ Router are:

Gateway IP Address: 192.168.2.1

Subnet Mask: 255.255.255.0

Note: These settings may be changed to suit your network requirements, but you must first configure at least one computer as described in this chapter to access the Barricade™ Router's Web configuration interface.
See "Configuring the Barricade™ Router" on page 35 for information on configuring the Barricade™ Router.)

If you have not previously configured TCP/IP for your computer, refer to "Configuring Client TCP/IP" on page 11. The IP address of the connected client PC should be 192.168.2.x (where x means 2–254). You can set the IP address for client PCs either by automatically obtaining an IP address from the Barricade™ Router's DHCP service or by manual configuration.

Configuring Your Computer in Windows 95/98/Me

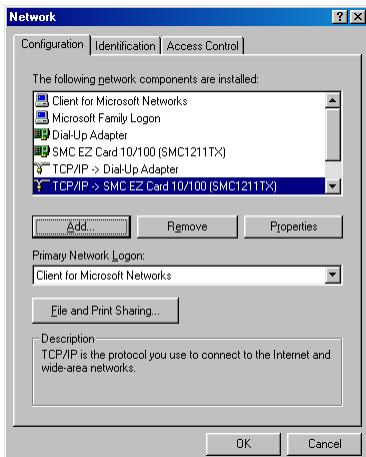
You may find that the instructions here do not exactly match your version of Windows. This is because these steps and screen shots were created in Windows 98. Windows 95 and Windows Millennium Edition are very similar, but not identical, to Windows 98.

DHCP IP Configuration

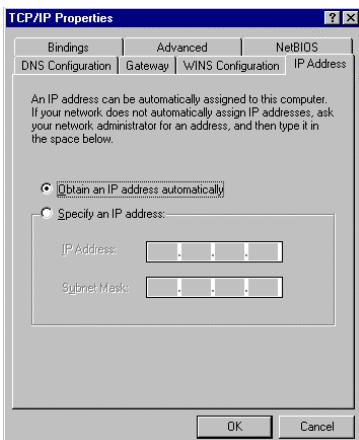
1. From the Windows desktop, click Start/Settings/Control Panel.

Setting Up TCP/IP

2. In the Control Panel, locate and double-click the Network icon.
3. On the Network window Configuration tab, double-click the TCP/IP entry for your network card.



4. Click the IP Address tab.



5. Click the “Obtain an IP address” option.
6. Next click on the Gateway tab and verify the Gateway field is blank. If there are IP addresses listed in the Gateway section, highlight each one and click Remove until the section is empty.

Configuring Client TCP/IP

7. Click the OK button to close the TCP/IP Properties window.
8. On the Network Properties Window, click the OK button to save these new settings.

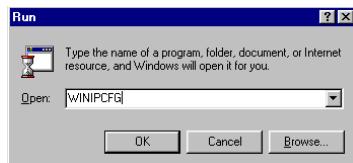
Note: Windows may ask you for the original Windows installation disk or additional files. Check for the files at c:\windows\options\cabs, or insert your Windows CD-ROM into your CDROM drive and check the correct file location, e.g., D:\win98, D:\win9x. (if D is the letter of your CD-ROM drive).

9. Windows may prompt you to restart the PC. If so, click the Yes button. If Windows does not prompt you to restart your computer, do so to ensure your settings.

Obtain IP Settings from Your Barricade™ Router

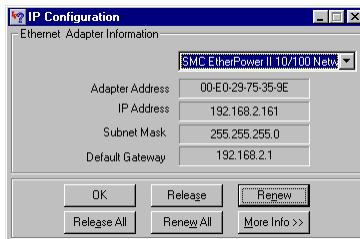
Now that you have configured your computer to connect to your Barricade™ Router, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from your Barricade™ Router, you will also verify that you have configured your computer correctly.

1. Click Start/Run.
2. Type WINIPCFG and click OK.



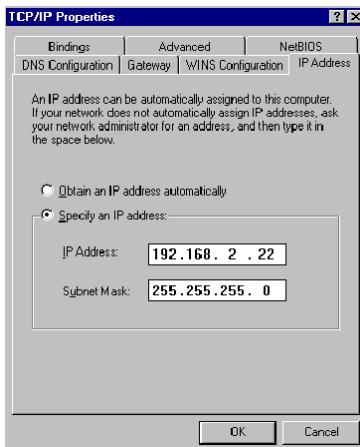
Setting Up TCP/IP

3. From the drop-down menu, select your network card. Click Release and then Renew. Verify that your IP address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that your Barricade™ Router is functioning. Click OK to close the IP Configuration window.



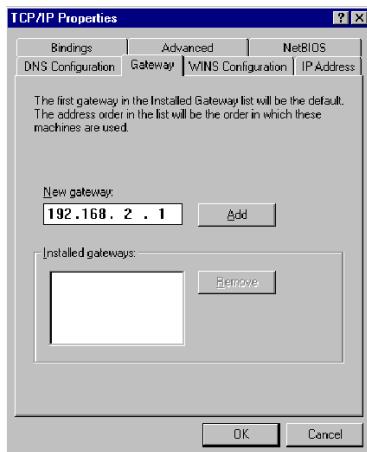
Manual IP Configuration

1. Follow steps 1-3 in “DHCP IP Configuration” on page 14
2. Check “Specify an IP address” on the IP Address tab. Enter an IP address based on the default network 192.168.2.x (where x is between 2 and 254), and use 255.255.255.0 for the subnet mask.

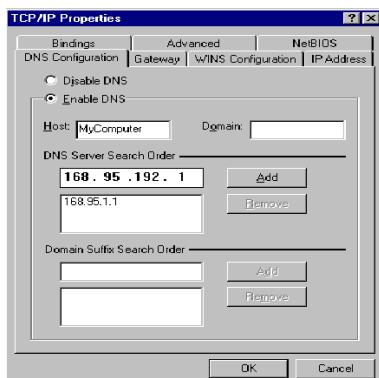


Configuring Client TCP/IP

3. In the Gateway tab, add the IP address of the Barricade™ Router (default: 192.168.2.1) in the New gateway field and click Add.



4. On the DNS Configuration tab, add the IP address for the Barricade™ Router and click Add. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the DNS Server Search Order field and click Add.



5. Record the configured information in the following table.

TCP/IP Configuration Setting

IP Address	_____
Subnet Mask	_____
Primary DNS Server	_____
Secondary DNS Server	_____
Default Gateway	_____
Host Name	_____

Setting Up TCP/IP

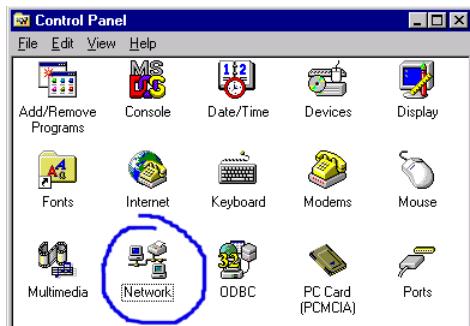
6. Windows may need your Windows 95/98/Me CD to copy some files. After it finishes copying, it will prompt you to restart your system. Click Yes and your computer will shut down and restart. After that, set up other PCs on the LAN according to the procedures described above.



Configuring Your Computer in Windows NT 4.0

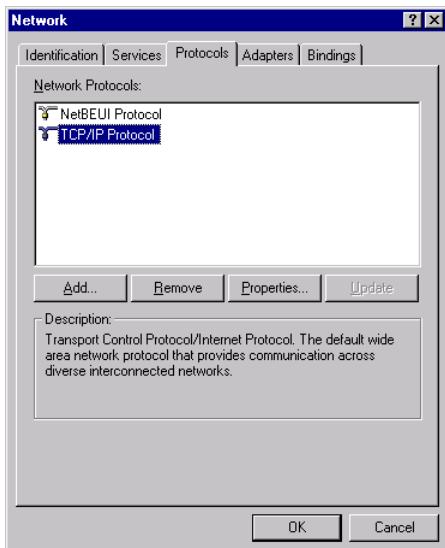
DHCP IP Configuration

1. From the Windows desktop click Start/Settings/Control Panel.
2. Double-click the Network icon.



Configuring Client TCP/IP

3. Click on the Protocols tab.
4. Double-click TCP/IP Protocol.



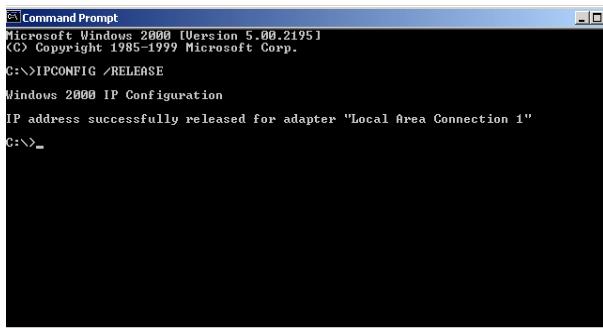
5. Click on the IP Address tab.
6. In the Adapter drop-down list, be sure your Ethernet adapter is selected.
7. Click on “Obtain an IP address from a DHCP server”.
8. Click OK to close the window.
9. Windows may copy files and will then prompt you to restart your system. Click Yes and your computer will shut down and restart.

Setting Up TCP/IP

Obtain IP Settings From Your Barricade™ Router

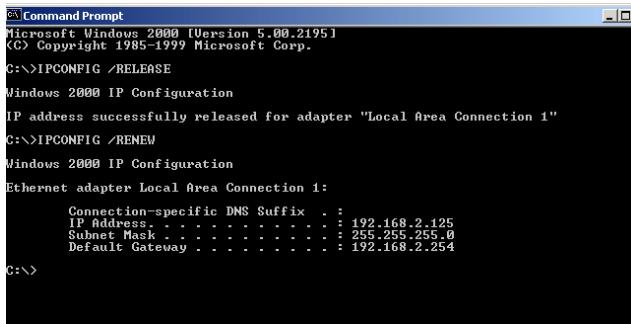
Now that you have configured your computer to connect to the Barricade™ Router, it needs to obtain new network settings. By releasing old IP settings and renewing them with settings from the Barricade™ Router, you will also verify that you have configured your computer correctly.

- 1.** On the Windows desktop, click Start/Programs/Command Prompt.
- 2.** In the Command Prompt window, type IPCONFIG /RELEASE and press the <ENTER> key.



- 3.** Type IPCONFIG /RENEW and press the <ENTER> key. Verify that your IP Address is now 192.168.2.xxx, your Subnet Mask is 255.255.255.0 and your Default Gateway is 192.168.2.1. These values confirm that the Barricade™ Router is functioning.

Configuring Client TCP/IP



```
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

C:\>IPCONFIG /RELEASE
Windows 2000 IP Configuration
IP address successfully released for adapter "Local Area Connection 1"

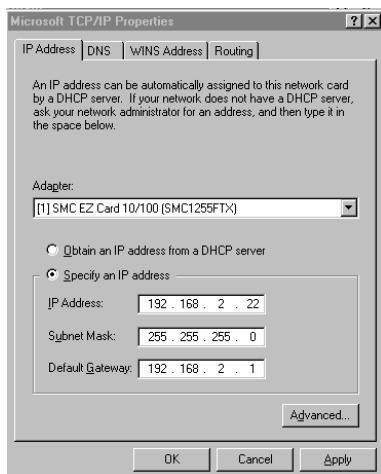
C:\>IPCONFIG /RENEW
Windows 2000 IP Configuration
Ethernet adapter Local Area Connection 1:
      Connection-specific DNS Suffix . :
      IP Address . . . . . : 192.168.2.125
      Subnet Mask . . . . . : 255.255.255.0
      Default Gateway . . . . . : 192.168.2.254

C:\>
```

4. Type EXIT and press <ENTER> to close the Command Prompt window.

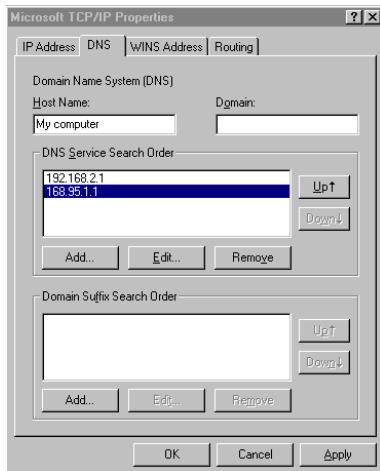
Manual IP Configuration

1. Follow steps 1-5 in “DHCP IP Configuration” on page 19.
2. Check “Specify an IP address” on the IP Address tab. Enter an IP address based on the default network 192.168.2.x (where x is between 2 and 254), use 255.255.255.0 for the subnet mask. In the Gateway field, add the IP address of the Barricade™ Router (default: 192.168.2.1) and click Apply.



Setting Up TCP/IP

3. On the DNS Configuration tab, in the DNS Server Search Order field add the IP address for the Barricade™ Router and click Add. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add specific DNS servers into the DNS Server Search Order field and click Add
4. Record the configured information in the following table.



TCP/IP Configuration Setting

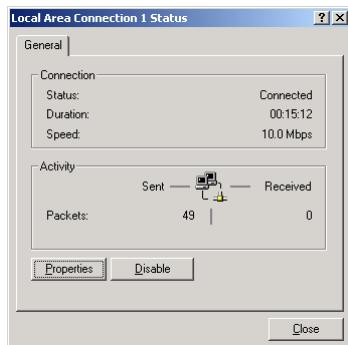
IP Address	_____	.	_____	.	_____	.	_____
Subnet Mask	_____	.	_____	.	_____	.	_____
Primary DNS Server	_____	.	_____	.	_____	.	_____
Secondary DNS Server	_____	.	_____	.	_____	.	_____
Default Gateway	_____	.	_____	.	_____	.	_____
Host Name	_____	.	_____	.	_____	.	_____

5. Click OK to save these new changes.

Configuring Your Computer in Windows 2000

DHCP IP Configuration

1. Access your Network settings by clicking Start, then choose Settings and then select Control Panel.
2. In the Control Panel, locate and double-click the Network and Dial-up Connections icon.
3. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Barricade™ Router. When the Status dialog box window opens, click the Properties button.
4. In the Local Area Connection Properties box, verify that the box next to Internet Protocol (TCP/IP) is checked. Then highlight the Internet Protocol (TCP/IP), and click the Properties button.
5. Select “Obtain an IP address automatically” to configure your computer for DHCP. Click the OK button to save this change and close the Properties window.
6. Click the OK button again to save these new changes.
7. Reboot your PC.

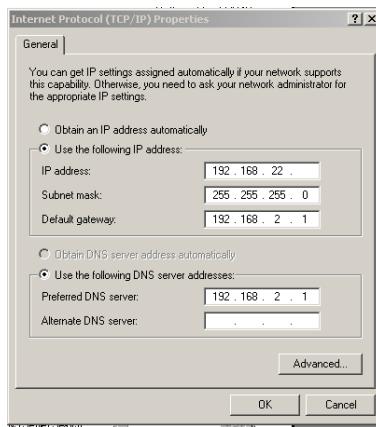


Obtain IP Settings From Your Barricade™ Router

See “Obtain IP Settings From Your Barricade™ Router” on page 21.

Manual IP Configuration

1. Follow steps 1-4 in “DHCP IP Configuration” on page 24.
2. Select “Use the following IP Address.”
3. Enter an IP address based on the default network 192.168.2.x (where x is between 2 and 254), use 255.255.255.0 for the subnet mask, and the IP address of the Barricade™ Router (default: 192.168.2.1) for the Default gateway field.
4. Select “Use the following DNS server addresses.”
5. Enter the IP address for the Barricade™ Router in the Preferred DNS server field. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add a specific DNS server into the Alternate DNS Server field.
6. Record the configured information in the following table.



TCP/IP Configuration Setting

IP Address	_____
Subnet Mask	_____
Preferred DNS Server	_____
Alternate DNS Server	_____
Default Gateway	_____

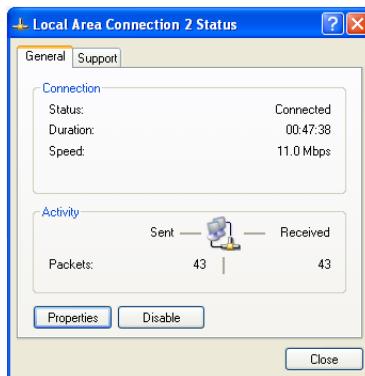
7. Click OK to close the dialog boxes.

Configuring Your Computer in Windows XP

DHCP IP Configuration

The following instructions assume you are running Windows XP with the default interface. If you are using the Classic interface (where the icons and menus look like previous Windows versions), please follow the instructions for Windows 2000 outlined above.

1. On the Windows desktop, click Start/Control Panel.
2. In the Control Panel window, click Network and Internet Connections.
3. Locate and double-click the Local Area Connection icon for the Ethernet adapter that is connected to the Barricade™ Router. Next, click the Properties button.

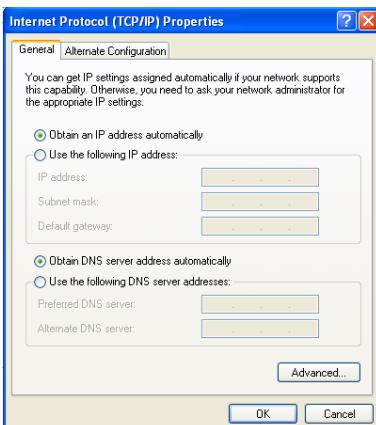
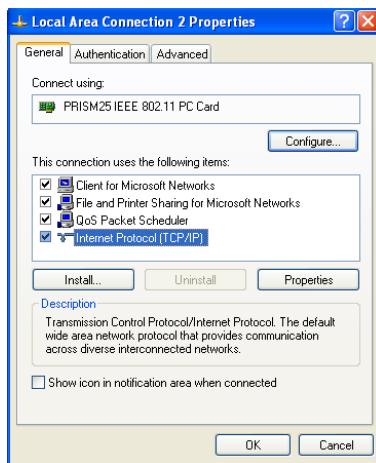


Setting Up TCP/IP

4. Double-click Internet Protocol (TCP/IP).
5. If “Obtain an IP address automatically” and “Obtain DNS server address automatically” are already selected, your computer is already configured for DHCP. Click Cancel to close each window.
6. Click the OK button again to save these new changes.
7. Reboot your PC.

Obtain IP Settings from Your Barricade

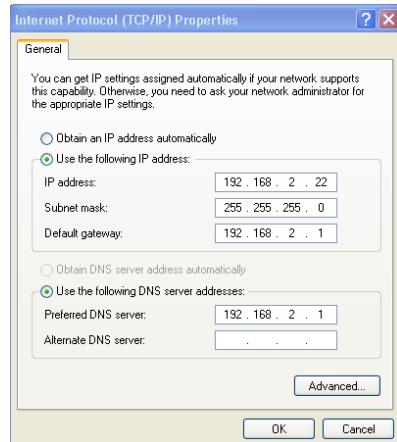
See “Obtain IP Settings From Your Barricade™ Router” on page 21.



Configuring Client TCP/IP

Manual IP Configuration

1. Follow steps 1-5 in “DHCP IP Configuration” on page 26.
2. Select “Use the following IP Address.”
3. Enter an IP address based on the default network 192.168.2.x (where x is between 2 and 254), use 255.255.255.0 for the subnet mask, and the IP address of the Barricade™ Router (default: 192.168.2.1) for the Default gateway field.
4. Select “Use the following DNS server addresses.”
5. Enter the IP address for the Barricade™ Router in the Preferred DNS server field. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add a specific DNS server into the Alternate DNS Server field and click OK to close the dialog boxes.
6. Record the configured information in the following table.



TCP/IP Configuration Setting

IP Address	_____
Subnet Mask	_____
Preferred DNS Server	_____
Alternate DNS Server	_____
Default Gateway	_____

7. Click OK to close the dialog box.

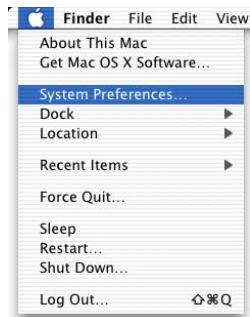
Configuring a Macintosh Computer

DHCP IP Configuration

You may find that the instructions here do not exactly match your screen. This is because these steps and screen shots were created using Mac OS 10.2. Mac OS 7.x and above are similar, but may not be identical to Mac OS 10.2

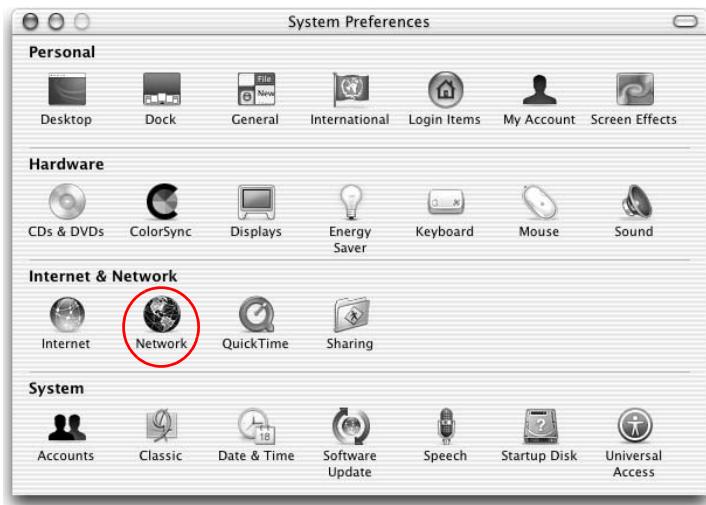
Follow these instructions:

1. Pull down the Apple Menu . Click System Preferences.

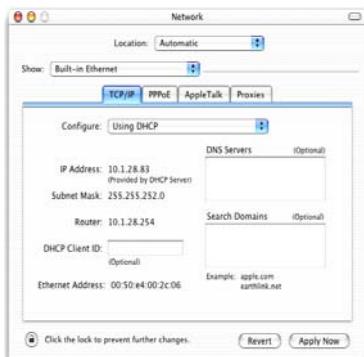


Configuring Client TCP/IP

- Double-click the Network icon in the Systems Preferences window.



- If Using DHCP is already selected in the Configure field, your computer is already configured for DHCP.
- Close the Network dialog box.



Obtain IP Settings from Your Barricade

Now that you have configured your computer to connect to your Barricade, it needs to obtain new network settings. By releasing old DHCP IP settings and renewing them with settings from your Barricade, you can verify that you have configured your computer correctly.

1. Select Systems Preferences in the pull down Apple Menu .
2. Double-click the Network icon in the Systems Preferences window.
3. Your new settings are shown in the TCP/IP tab. Verify that your IP Address is now **192.168.2.xxx**, your Subnet Mask is **255.255.255.0** and your Default Gateway is **192.168.2.1**. These values confirm that your Barricade is functioning.

4. Close the TCP/IP window.

Configuring Client TCP/IP

Manual IP Configuration

1. Follow steps 1-2 in “DHCP IP Configuration” on page 29
2. Select Manually in the Configure field.
3. Enter an IP address based on the default network 192.168.2.x (where x is between 2 and 254), use 255.255.255.0 for the subnet mask. In the Router field, add the IP address of the Barricade™ Router (default: 192.168.2.1) and click Apply Now.

The screenshot shows the Network TCP/IP configuration dialog box for 'Built-in Ethernet'. The 'Configure' dropdown is set to 'Manually'. The 'IP Address' field contains '192.168.2.22', 'Subnet Mask' is '255.255.255.0', and 'Router' is '192.168.2.1'. The 'DNS Servers' field contains '192.168.2.1'. There is a 'Search Domains' field with '(Optional)' and an example 'apple.com earthlink.net'. At the bottom, there are 'Revert' and 'Apply Now' buttons, and a note to click the lock to prevent further changes.
4. Enter the IP address for the Barricade™ Router in the DNS servers field. This automatically relays DNS requests to the DNS server(s) provided by your ISP. Otherwise, add a specific DNS server into the DNS Server field and click Apply now to close the dialog box.
5. Record the configured information in the following table.

TCP/IP Configuration Setting

IP Address _____

Subnet Mask _____

DNS Server _____

Default Gateway _____

6. Click Apply now to apply the new settings then close the dialog box.

Verifying Your TCP/IP Connection

After installing the TCP/IP communication protocols and configuring an IP address in the same network as the Barricade™ Router, use the Ping command to check if your computer has successfully connected to the Barricade™ Router. The following example shows how the Ping procedure can be executed in an MS-DOS window. First, execute the Ping command:

```
ping 192.168.2.1
```

If a message similar to the following appears:

```
Pinging 192.168.2.1 with 32 bytes of data:  
Reply from 192.168.2.1: bytes=32 time=2ms TTL=64  
a communication link between your computer and the  
Barricade™ Router has been successfully established.
```

If you get the following message,

```
Pinging 192.168.2.1 with 32 bytes of data:  
Request timed out.
```

there may be something wrong in your installation procedure.
Check the following items in sequence:

1. Is the Ethernet cable correctly connected between the Barricade™ Router and the computer?
2. The LAN LED on the Barricade™ Router and the Link LED of the network card on your computer must be on.
3. Is TCP/IP properly configured on your computer?

If the IP address of the Barricade™ Router is 192.168.2.1, the IP address of your PC must be from 192.168.2.2 - 192.168.2.254 and the default gateway must be 192.168.2.1.

If you can successfully Ping the Barricade™ Router you are now ready to connect to the Internet.

CONFIGURING THE BARRICADE™ ROUTER

The Barricade™ Router can be configured by any Java-supported browser including Internet Explorer 5.0 or above. Using the Web management interface, you can configure the Barricade™ Router and view statistics to monitor network activity.

Note: Before you attempt to configure your router, if you have access to the Internet please visit www.smc.com or www.smc-europe.com and download the latest firmware update to ensure your router is running the latest firmware.

Before you attempt to log into the Barricade™ Router's Web-based Administration, please verify the following.

1. Your browser is configured properly (see below).
2. Disable any firewall or security software that may be running.
3. Confirm that you have a good link LED where your computer is plugged into the Barricade™ Router. If you don't have a link light – then try another cable until you get a good link.

Browser Configuration

Confirm that your browser is configured for a direct connection to the Internet using the Ethernet cable that is installed in the computer. This is configured through the options/preference section of your browser.

Disable Proxy Connection

You will also need to verify that the HTTP Proxy feature of your web browser is disabled. This is so that your web browser will be able to view the Barricade™ Router configuration pages. The following steps are for Internet Explorer and for Netscape. Determine which browser you use and follow the appropriate steps.

Internet Explorer (5 or above)

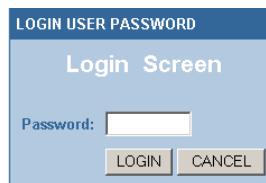
1. Open Internet Explorer. Click Tools, and then select Internet Options.
2. In the Internet Options window, click the Connections tab.
3. Click the LAN Settings button.
4. Clear all the check boxes and click OK to save these LAN settings.
5. Click OK again to close the Internet Options window.

Internet Explorer (For Macintosh)

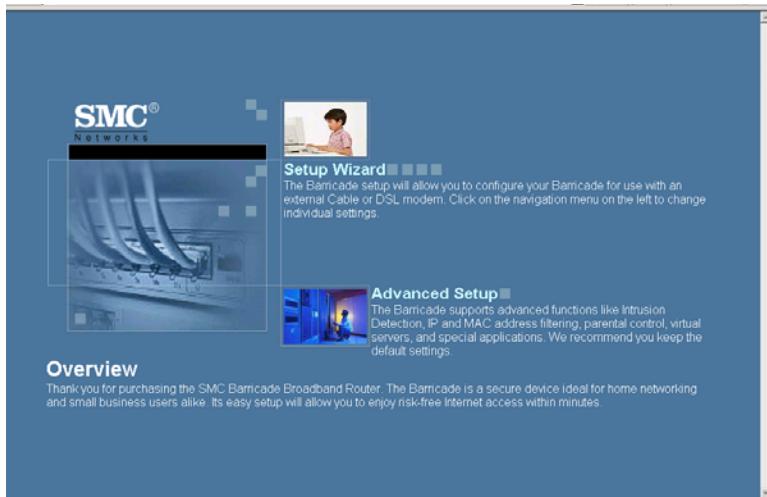
1. Open Internet Explorer. Click Edit/Preferences.
2. In the Internet Explorer Preferences window, under Network, select Proxies.
3. Uncheck all checkboxes and click OK.

Internet Explorer (For Macintosh)

To access the Barricade™ Router's management interface, enter the Barricade™ Router IP address in your Web browser <http://192.168.2.1>. Then click LOGIN. (By default, there is no password.)



The home page displays the Setup Wizard and Advanced Setup options.



Navigating the Web Browser Interface

The Barricade™ Router's management interface features a Setup Wizard and an Advanced Setup section. Use the Setup Wizard if you want to quickly set up the Barricade™ Router for use with a cable modem or DSL modem.

Advanced Setup supports more advanced functions like hacker attack detection, IP and MAC address filtering, intrusion detection, virtual server setup, virtual DMZ hosts, and other advanced functions.

Making Configuration Changes

Configurable parameters have a dialog box or a drop-down list. Once a configuration change has been made on a page, be sure to click the APPLY or NEXT button at the bottom of the page to enable the new setting.

Note: To ensure proper screen refresh after a command entry, ensure that Internet Explorer 5.0 is configured as follows: Under the menu Tools/Internet Options/General/Temporary Internet Files/Settings, the setting for "Check for newer versions of stored pages" should be "Every visit to the page."

Setup Wizard

Time Zone

Click on the Setup Wizard picture. The first item in the Setup Wizard is Time Zone setup.



For accurate timing of client filtering and log events, you need to set the time zone. Select your time zone from the drop-down list, and click NEXT.

Check Enable Automatic Time Server Maintenance to automatically maintain the Barricade™ Router system time by synchronizing with a public time server over the Internet. Then configure two different time servers by selecting the options in the Primary Server and Secondary Server fields.

Configuring the Barricade™ Router

Broadband Type

Select the type of broadband connection you have.



For a cable modem connection see the following page. For a Fixed-IP xDSL connection see “Fixed-IP xDSL” on page 41, and for a PPPoE xDSL connection, see “PPPoE” on page 41.

Cable Modem

After selecting Cable Modem as the Broadband Type, a message will appear stating that your data has been successfully saved.

Note: Select Home to return to the home page, then select Advanced Settings/WAN to configure the required parameters. (See “WAN” on page 47.)

Fixed-IP xDSL

IP Address	[0 . 0 . 0 . 0]
Gateway IP Address	[0 . 0 . 0 . 0]
DNS IP Address	[0 . 0 . 0 . 0]
Subnet Mask	[0 . 0 . 0 . 0]

Some xDSL Internet Service Providers may assign a fixed (static) IP address. If you have been provided with this information, choose this option and enter the assigned IP address, gateway IP address, DNS IP addresses, and subnet mask. Click FINISH to complete the setup.

PPPoE

Use PPPoE Authentication	
User Name :	<input type="text"/>
Password :	<input type="password"/>
Please retype your password : <input type="password"/>	
Service Name : <input type="text"/>	
MTU :	1454 (1440<=MTU Value<=1492)
Maximum Idle Time	10
<input checked="" type="checkbox"/> Auto-reconnect	

Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless you have a particular reason to change it.

Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10)

Configuring the Barricade™ Router

Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again. Click FINISH to complete the setup.

Advanced Setup

Use the Web management interface to define system parameters, manage and control the Barricade™ Router and its ports, or monitor network conditions. The following table outlines the selections available from this program.

Menu	Description
System	Sets the local time zone, the password for administrator access, and the IP address of a PC that will be allowed to manage the Barricade™ Router remotely.
WAN	Specifies the Internet connection type: <ul style="list-style-type: none">• Dynamic IP host configuration and the physical MAC address of each media interface• PPPoE configuration• PPTP• Static IP and ISP gateway address• Specifies DNS servers to use for domain name resolution.
LAN	Sets the TCP/IP configuration of the Barricade™ Router's LAN interface and all DHCP clients.
NAT	Shares a single ISP account with multiple users, sets up virtual servers.
Firewall	Configures a variety of security and specialized functions, including: Access Control, Hacker Prevention, and DMZ.
DDNS	Dynamic DNS provides users on the Internet with a method to tie their domain name(s) to computers or servers.

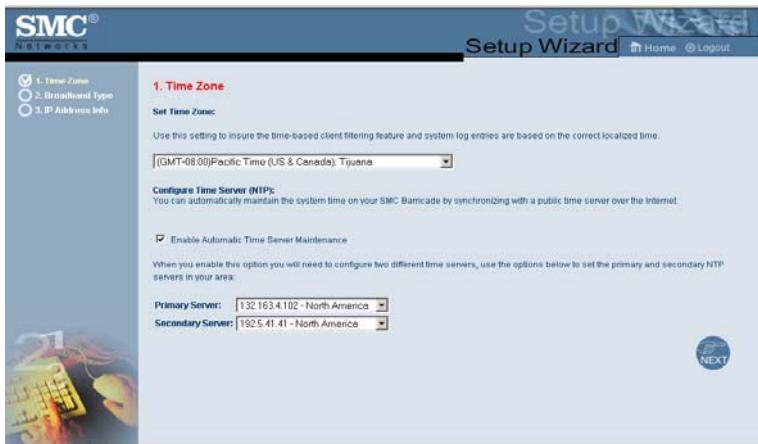
Advanced Setup

Menu	Description
UPnP	With Universal Plug and Play, a device can automatically dynamically join a network, obtain an IP address, communicate its capabilities, and learn about the presence and capabilities of other devices. Devices can then directly communicate with each other. This further enables peer to peer networking.
Tools	Contains options to backup and restore the current configuration, restore all configuration settings to the factory defaults, update system firmware, or reset the system.
Status	<p>Provides WAN connection type and status, firmware and hardware version numbers, system IP settings, as well as DHCP, NAT, and Firewall information.</p> <p>Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, and the hardware version and serial number.</p> <p>Shows the security and DHCP client log.</p>

Configuring the Barricade™ Router

System

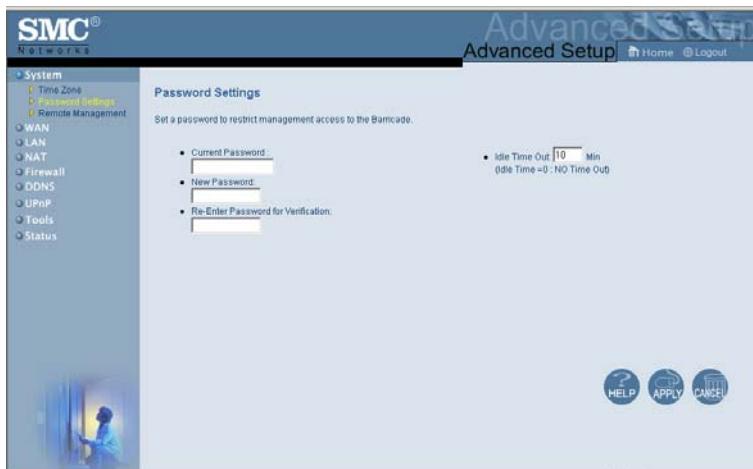
Time Zone



For accurate timing of client filtering and log events, you need to set the time zone. Select your time zone from the drop-down list, and click NEXT.

Check Enable Automatic Time Server Maintenance to automatically maintain the Barricade™ Router system time by synchronizing with a public time server over the Internet. Then configure two different time servers by selecting the options in the Primary Server and Secondary Server fields.

Password Settings



Use this menu to restrict access based on a password. By default, there is no password. For security you should assign one before exposing the Barricade™ Router to the Internet.

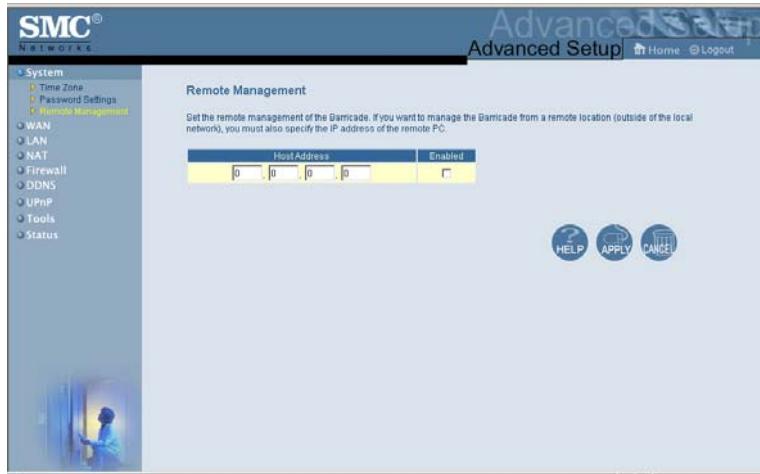
Passwords can contain from 3–12 alphanumeric characters and are not case sensitive.

Note: If your password is lost, or you cannot gain access to the user interface, press the Reset button on the front panel (holding it down for at least five seconds) to restore the factory defaults. (The default is no password.)

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the login session is maintained during inactivity. If the connection is inactive for longer than the maximum idle time, it will perform system logout, and you have to login to the Web management system again. (Default: 10 minutes)

Configuring the Barricade™ Router

Remote Management

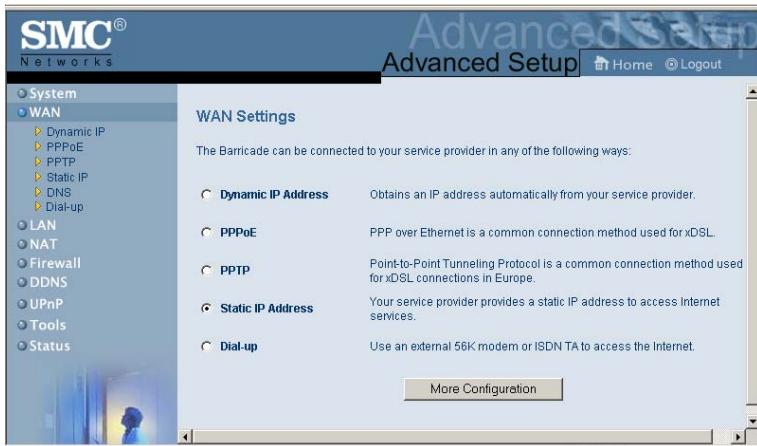


Remote Management allows a remote PC to configure, manage, and monitor the Barricade™ Router using a standard Web browser. Check Enable and enter the IP address of the remote host. Click APPLY.

Note: If you specify 0.0.0.0 as this IP address, any host can manage the Barricade™ Router.

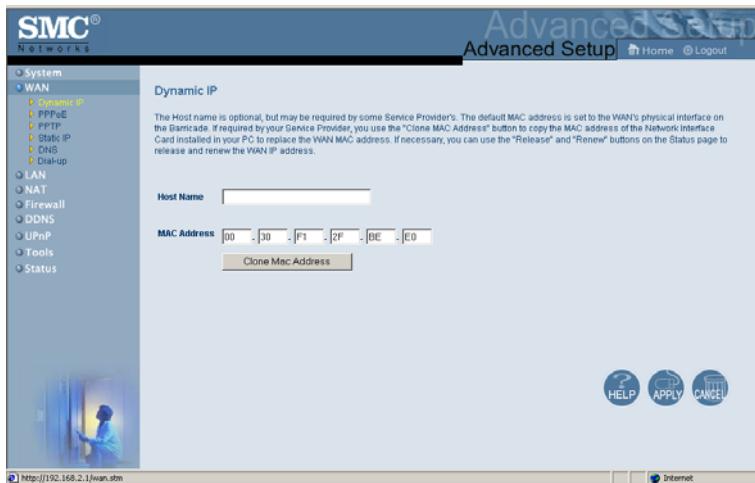
WAN

Specify the WAN connection type provided by your Internet Service Provider, then click More Configuration to enter detailed configuration parameters for the selected connection type.



Configuring the Barricade™ Router

Dynamic IP

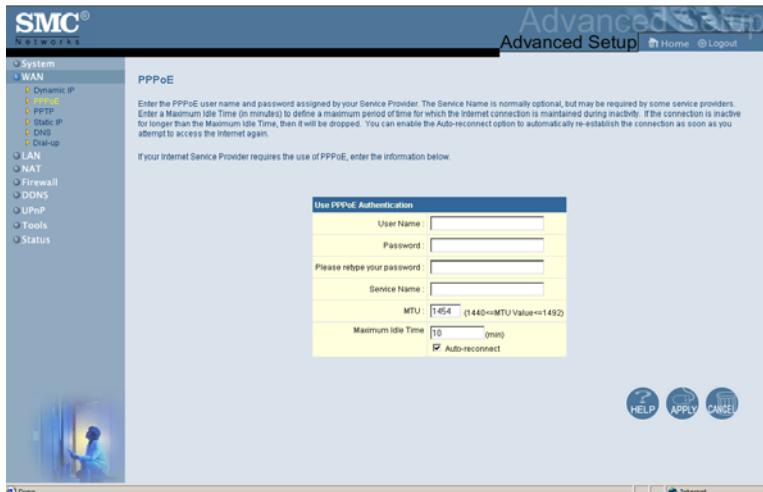


The Host Name is optional, but may be required by some ISPs. The default MAC address is set to the WAN's physical interface on the Barricade™ Router. Use this address when registering for Internet service, and do not change it unless required by your ISP. If your ISP used the MAC address of an Ethernet card as an identifier when first setting up your broadband account, only connect the PC with the registered MAC address to the Barricade™ Router and click the Clone MAC Address button. This will replace the current Barricade™ Router MAC address with the already registered Ethernet card MAC address.

If you are unsure of which PC was originally set up by the broadband technician, call your ISP and request that they register a new MAC address for your account. Register the default MAC address of the Barricade™ Router.

Advanced Setup

Point-to-Point Over Ethernet (PPPoE)



Enter the PPPoE User Name and Password assigned by your Service Provider. The Service Name is normally optional, but may be required by some service providers.

The MTU (Maximum Transmission Unit) governs the maximum size of the data packets. Leave this on the default value (1454) unless you have a particular reason to change it.

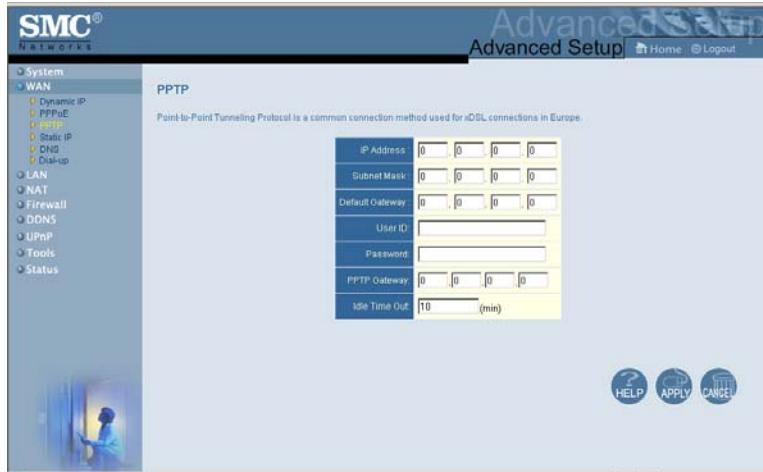
Enter a Maximum Idle Time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10 minutes)

Note: Note: Please be aware that the setting "Maximum Idle Time" to "0" and/or "Auto-Reconnect" enabled can cause increased telephone bills. For further information please visit www.smc-europe.com or contact SMC's technical support team.

Configuring the Barricade™ Router

You can enable the auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.

Point-to-Point Tunneling Protocol (PPTP)



Point-to-Point Tunneling Protocol (PPTP) can be used to join different physical networks using the Internet as an intermediary. Using the above screen allows client PCs to establish a normal PPTP session and provides hassle-free configuration of the PPTP client on each client PC.

Enter the assigned IP address, subnet mask and default gateway IP address (usually supplied by your ISP), and then the PPTP User ID, Password and PPPTP Gateway IP address.

Advanced Setup

Enter a maximum Idle Time Out (in minutes) to define a maximum period of time for which the PPTP connection is maintained during inactivity. If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. (Default: 10 minutes)

Note: Please be aware that the setting "Maximum Idle Time" to "0" and/or "Auto-Reconnect" enabled can cause increased telephone bills. For further information please visit www.smc-europe.com or contact SMC's technical support team.

Static IP Address



If your Internet Service Provider has assigned a fixed IP address, enter the assigned address and subnet mask for the Barricade™ Router, then enter the gateway address of your ISP.

You may need a fixed address if you want to provide Internet services, such as a Web server or FTP server.

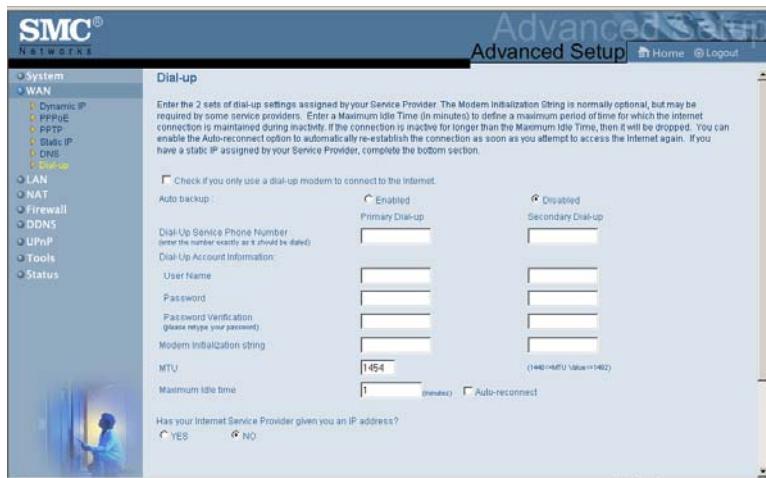
Configuring the Barricade™ Router

DNS



Domain Name Servers map numerical IP addresses to the equivalent domain name (e.g., www.smc.com). Your ISP should provide the IP address of one or more domain name servers. Enter those addresses in this screen.

Dial-up



If you are accessing the Internet via an ISDN TA or PSTN modem attached to the serial port on the Barricade™ Router, then you must specify your account information on this screen as described below.

Note: If not checked, then this connection will only be used for backup access if the primary WAN link fails

- Dial-Up Service Phone Number – Enter the phone number your service provider has given to you for Internet access.
- Dial-Up Account Information – Enter your ISP account user name and password
- Modem Initialization String – This is normally optional, but may be required by some service providers.

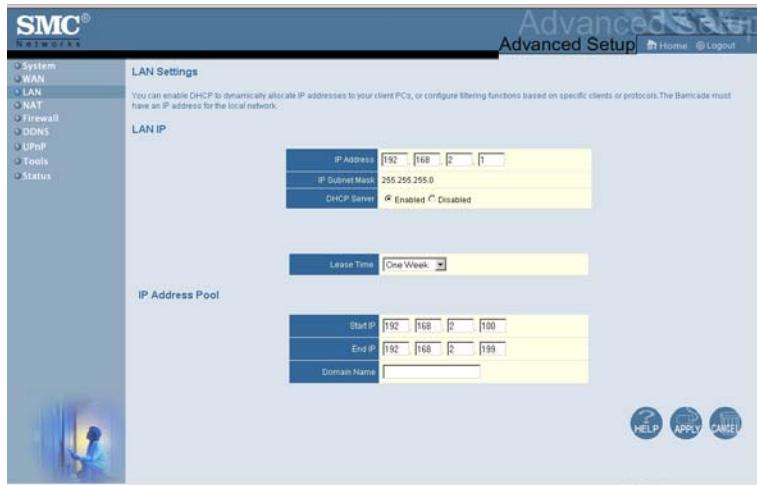
Configuring the Barricade™ Router

- MTU – Leave the Maximum Transmission Unit (MTU) at the default value (1454) unless you have a particular reason to change it.
- Maximum Idle Time – Enter a maximum idle time (in minutes) to define a maximum period of time for which the Internet connection is maintained during inactivity (Default: 10). If the connection is inactive for longer than the Maximum Idle Time, it will be dropped. Enable the Auto-reconnect option to automatically re-establish the connection as soon as you attempt to access the Internet again.
- Has your Internet Service Provider given you an IP address?
 - If you are assigned a dynamic IP address every time you dial up, select No for this item. However, if your ISP has assigned a fixed IP address for you to use, select Yes for this item and enter the IP address and subnet mask.

Note: If your ISP has given you a secondary phone number, or if you have a secondary Internet service account, then fill in the relevant fields under Secondary Dial-up.

Advanced Setup

LAN



- LAN IP – Use the LAN menu to configure the LAN IP address for the Barricade™ Router and to enable the DHCP server for dynamic client address allocation.
- Set a period for the lease time if required. For home networks this may be set to Forever, which means there is no time limit on the IP address lease.
- IP Address Pool – A dynamic IP start address may be specified by the user, e.g. 192.168.2.100 (default value). Once this start IP address has been assigned, IP addresses running from 192.168.2.100-99 will be part of the dynamic IP address pool. IP addresses from 192.168.2.2-99, and 192.168.2.200-254 will be available as static IP addresses.

Remember not to include the address of the Barricade™ Router in the client address pool. Also remember to configure your client PCs for dynamic IP address allocation.

Configuring the Barricade™ Router

Network Address Translation (NAT)

From this section you can configure the Address Mapping, Virtual Server, and Special Application features that provide control over the port openings in the router's firewall. This section can be used to support several Internet based applications such as email, FTP, and Telnet.

Address Mapping

The screenshot shows the SMC Networks Advanced Setup interface. On the left, a sidebar menu lists various configuration sections: System, WAN, LAN, NAT (with Address Mapping selected), Virtual Server, Special Applications, Firewall, DDNS, UPnP, Tools, and Status. The main content area is titled "Address Mapping". It contains a brief description of Network Address Translation (NAT) and its purpose. Below this, there is a table with 7 rows, each representing a mapping rule. Each row has three input fields: Global IP, From Internal IP, and To Internal IP. The first row shows: Global IP [0] [0] [0] is transformed as multiple virtual IPs from 192.168.2 [0] to 192.168.2 [0]. Subsequent rows show similar mappings for ports 1, 2, 3, 4, 5, 6, and 7.

Global IP	From Internal IP	To Internal IP	Description
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		
[0]	[0]	[0]	is transformed as multiple virtual IPs
from 192.168.2 [0]	to 192.168.2 [0]		

Allows one or more public IP addresses to be shared by multiple internal users. Enter the Public IP address you wish to share into the Global IP field. Enter a range of internal IPs that will share the global IP.

Virtual Server

The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar has a tree view with nodes like System, WAN, LAN, NAT (selected), Firewall, QoS, DDoS, PHP, Tools, and Status. The main area is titled 'Virtual Server' and contains a brief description: 'You can configure the Barricade as a virtual server so that remote users accessing services such as the Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Barricade redirects the external service request to the appropriate server (located at another internal IP address).'. Below this is a table with 13 rows, each representing a mapping rule. The columns are Private IP, Private Port, Type, and Public Port.

	Private IP	Private Port	Type	Public Port
1	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
2	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
3	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
4	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
5	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
6	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
7	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
8	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
9	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
10	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
11	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
12	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	
13	192.168.2.1		<input checked="" type="radio"/> TCP <input type="radio"/> UDP	

If you configure the Barricade™ Router as a virtual server, remote users accessing services such as Web or FTP at your local site via public IP addresses can be automatically redirected to local servers configured with private IP addresses. In other words, depending on the requested service (TCP/UDP port number), the Barricade™ Router redirects the external service request to the appropriate server (located at another internal IP address).

For example, if you set Type/Public Port to TCP/80 (HTTP or Web) and the Private IP/Port to 192.168.2.2/80, then all HTTP requests from outside users will be transferred to 192.168.2.2 on port 80. Therefore, by just entering the IP Address provided by the ISP, Internet users can access the service they need at the local address to which you redirect them.

The more common TCP service ports include:

HTTP: 80, FTP: 21, Telnet: 23, and POP3: 110.

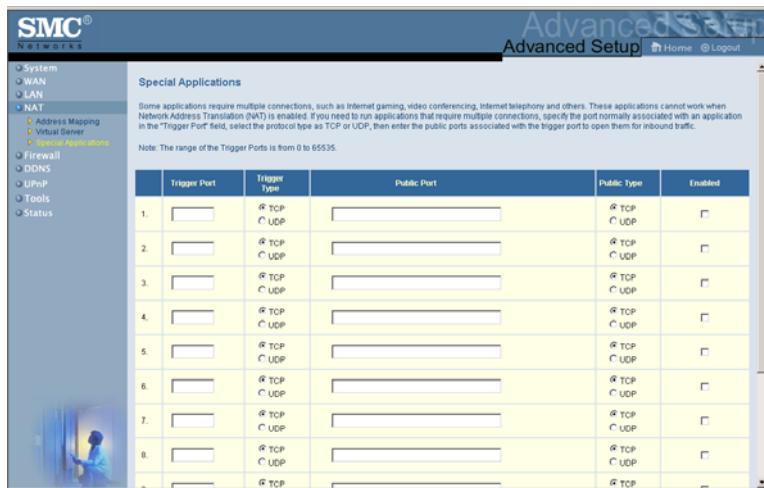
Configuring the Barricade™ Router

Special Applications

Some applications, such as Internet gaming, videoconferencing, Internet telephony and others, require multiple connections.

These applications cannot work with Network Address

Translation (NAT) enabled. If you need to run applications that require multiple connections, use the following screen to specify the additional public ports to be opened for each application.



Specify the public port number normally associated with an application in the Trigger Port field. Set the protocol type to TCP or UDP, then enter the ports that the application requires. The ports may be in the format 7, 11, 57, or in a range, e.g., 72-96, or a combination of both, e.g., 7, 11, 57, 72-96.

Popular applications requiring multiple ports are listed in the Popular Applications field. From the drop-down list, choose the application and then choose a row number to copy this data into.

Note: Choosing a row that already contains data will overwrite the current settings.

Advanced Setup

For a full list of ports and the services that run on them, see www.iana.org/assignments/port-numbers.

Firewall

The Barricade™ Router firewall can provide access control of connected client PCs, block common hacker attacks, including IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snork Attack, TCP null scan, and TCP SYN flooding. The firewall does not significantly affect system performance, so we advise leaving it enabled to protect your network users.

Access Control

The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar menu includes options like System, WAN, LAN, NAT, Firewall (selected), DDNS, UPnP, Tools, and Status. The main content area is titled "Access Control" and contains a brief description: "Access Control allows users to define the traffic type permitted or not-permitted to WAN port service. This page includes IP address filtering and MAC address filtering." Below this are two configuration sections: "Enable Filtering Function:" with radio buttons for Yes (selected) and No, and "Normal Filtering Table (up to 10 computers)". A table below lists Client PC Description, Client PC IP Address, Client Service, Schedule Rule, and Configure. A red message at the bottom of the table says "No Valid Filtering Rule !!!". At the bottom are buttons for Add PC, HELP, APPLY, and CANCEL.

Using this option allows you to specify different privileges based on IP address for the client PCs.

Configuring the Barricade™ Router

Note: Click on Add PC and define the appropriate settings for client PC services (as shown in the following screen).

Access Control Add PC

SMC® Networks Advanced Setup Home Logout

Access Control Add PC

This page allows users to define service limitations of client PCs, including IP address, service type and scheduling rule criteria. For the URL blocking function, you need to configure the URL address first on the "URL Blocking Site" page. For the scheduling function, you also need to configure the schedule rule first on the "Schedule Rule" page.

Client PC Description:

Client PC IP Address: 192.168.2

Client PC Services:

Service Name	Detail Description	Blocking
WWW	HTTP, TCP Port 80, 3128, 8000, 8001, 8000	<input type="checkbox"/>
WWW with URL Blocking	HTTP (Ref. URL Blocking Site Page)	<input type="checkbox"/>
Email Sending	SMTP, TCP Port 25	<input type="checkbox"/>
News Forums	NNTP, TCP Port 119	<input type="checkbox"/>
Email Receiving	POP3, TCP Port 110	<input type="checkbox"/>
Secure HTTP	HTTPS, TCP Port 443	<input type="checkbox"/>
File Transfer	FTP, TCP Port 21	<input type="checkbox"/>
MSN Messenger	TCP Port 1863	<input type="checkbox"/>
Telnet Service	TCP Port 23	<input type="checkbox"/>
AIM	AOL Instant Messenger, TCP Port 5190	<input type="checkbox"/>
NimWMeeting	H.323, TCP Port 1720, 1903	<input type="checkbox"/>
DNS	UDP Port 53	<input type="checkbox"/>
SNMP	UDP Port 161, 162	<input type="checkbox"/>
VPN-PPTP	TCP Port 1723	<input type="checkbox"/>
VPN-L2TP	UDP Port 1701	<input type="checkbox"/>

Client PC Services (up to 32 computers):

ID	MAC Address
1	<input type="text"/> : <input type="text"/>
2	<input type="text"/> : <input type="text"/>
3	<input type="text"/> : <input type="text"/>
4	<input type="text"/> : <input type="text"/>
5	<input type="text"/> : <input type="text"/>

MAC Filtering Table

SMC® Networks Advanced Setup Home Logout

MAC Filtering Table

This section helps provides MAC Filter configuration. When enabled, only MAC addresses configured will have access to your network. All other client devices will get denied access. This security feature can support up to 32 devices and applies to clients.

MAC Address Control: Yes No

MAC Filtering Table (up to 32 computers)

ID	MAC Address
1	<input type="text"/> : <input type="text"/>
2	<input type="text"/> : <input type="text"/>
3	<input type="text"/> : <input type="text"/>
4	<input type="text"/> : <input type="text"/>
5	<input type="text"/> : <input type="text"/>

Advanced Setup

The MAC Filtering feature of the Barricade™ Router allows you to limit access to your network to up to 32 clients based on the MAC (Media Access Control) address of the client machine. This ID is unique to each network adapter. If the MAC address is listed in the table, that client machine will have access to the network.

URL Blocking

To configure the URL Blocking feature, use the table below to specify the web sites (www.somesite.com) and/or keywords you want to filter on your network.

To complete this configuration, you will need to create or modify an access rule in “Access Control” on page 59. To modify an existing rule, click the Edit option next to the rule you want to modify. To create a new rule, click on the Add PC option.

From “Access Control Add PC” on page 60, check the option for WWW with URL Blocking in the Client PC Service table to filter out the websites and keywords specified below.

The screenshot shows the SMC Networks Advanced Setup interface. The left sidebar menu includes options like System, WAN, LAN, NAT, Firewall (with sub-options: Access Control, MAC Filter, URL Blocking, Schedule Rule, Intrusion Detection, DMZ), DDNS, UPnP, Tools, and Status. The main content area is titled "URL Blocking" under "Advanced Setup". It contains a section for "Disallow Web Sites and Keywords" with instructions: "You can block access to certain Web sites from a particular PC by entering either a full URL address or just a keyword of the Web site." Below this is a note: "To specify the particular PC, go back to the "Access Control" page and check the box for "Http with URL Blocking" in the "Normal Filtering Table". A table titled "URL / Keyword" lists 20 entries, each consisting of a Rule Number and a URL/Keyword pair. The table rows are numbered Site 1 through Site 20.

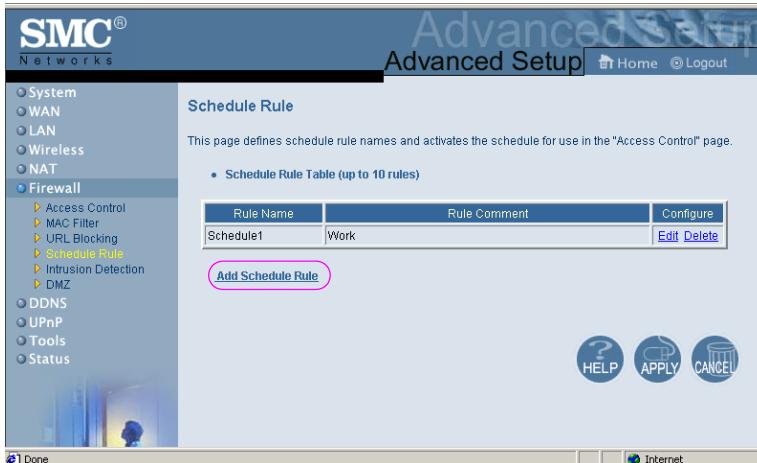
Rule Number	URL / Keyword	Rule Number	URL / Keyword
Site 1		Site 16	
Site 2		Site 17	
Site 3		Site 18	
Site 4		Site 19	
Site 5		Site 20	

Use the above screen to block access to Web sites or to Web URLs containing the keyword specified in the keyword table.

Configuring the Barricade™ Router

Schedule Rule

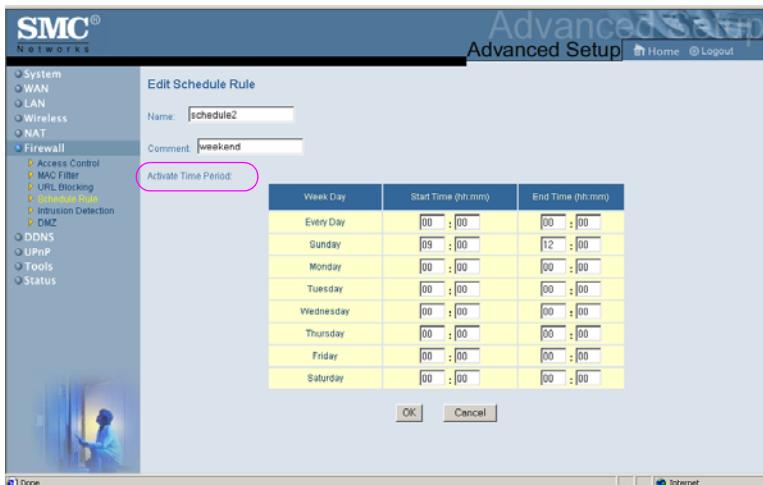
The Schedule Rule feature allows you to configure specific rules based on Time and Date. These rules can then be used to configure more specific Access Control.



Enables Schedule-based Internet access control.

1. Click Add Schedule Rule.
2. Define the settings for the schedule rule (as shown on the following screen).

Advanced Setup



3. Click OK and then click the APPLY button to save your settings.

Configuring the Barricade™ Router

Intrusion Detection

The Barricade™ Router Intrusion Detection feature limits access for incoming traffic at the WAN port.

This screenshot shows the 'Intrusion Detection' configuration page within the Barricade Router's Advanced Setup interface. The left sidebar lists various router settings like System, WAN, LAN, NAT, Firewall, DDNS, UPnP, Tools, and Status. Under Firewall, 'Intrusion Detection' is selected. The main panel has a title 'Intrusion Detection'. It contains a note about SPI and Anti-DoS protection, mentioning it can block common hacker attacks like IP Spoofing, Land Attack, Ping of Death, IP with zero length, Smurf Attack, UDP port loopback, Snort Attack, TCP null scan, and TCP SYN flooding. There are three sections: 'Intrusion Detection Feature' (checkboxes for SPI and Anti-DoS, RPF detect, Discard Ping To WAN), 'Stateful Packet Inspection' (checkboxes for Packet Fragmentation, TCP Connection, UDP Session, FTP Service, HTTP Service, and TFTP Service), and 'When hackers attempt to enter your network, we can alert you by e-mail' (fields for E-mail Address, SMTP Server Address, POP3 Server Address, and User name). At the bottom right are 'Internet' and 'Done' buttons.

This screenshot shows the 'Firewall' configuration page within the Barricade Router's Advanced Setup interface. The left sidebar lists the same settings as the previous screen. Under Firewall, 'DoS' is selected. The main panel has a title 'Advanced Setup'. It contains a 'Connection Policy' section with fields for Fragmentation half-open wait (10 sec), TCP SYN wait (30 sec), TCP FIN wait (5 sec), TCP connection idle timeout (2500 sec), UDP session idle timeout (30 sec), and H.223 data channel idle timeout (100 sec). Below that is a 'DoS Detect Criteria' section with multiple rows of configuration fields. At the bottom right are 'HELP', 'APPLY', and 'CANCEL' buttons.

- **SPI and Anti-DoS firewall protection (Default: Enabled)** – When the Stateful Packet Inspection (SPI) feature is turned on, all incoming packets will be blocked except for those types marked with a check in the Stateful Packet Inspection section.
- **RIP Defect (Default: Enabled)** – If a Router Information Protocol (RIP) request packet is not acknowledged by the router, it will stay in the input queue and not be released. Accumulated packets could cause the input queue to fill, causing severe problems for all protocols. Enabling this feature prevents the packets from accumulating.
- **Discard Ping from WAN (Default: Disabled)** – Prevents a PING on the Gateway's WAN port from being routed to the network.
- **Stateful Packet Inspection** – This is called a “stateful” packet inspection because it examines the contents of the packet to determine the state of the communications; i.e., it ensures that the stated destination computer has previously requested the current communication. This is a way of ensuring that all communications are initiated by the recipient computer and are taking place only with sources that are known and trusted from previous interactions. In addition to being more rigorous in their inspection of packets, stateful inspection firewalls also close off ports until connection to the specific port is requested.

When particular types of traffic are checked, only the particular type of traffic initiated from the internal LAN will be allowed. For example, if the user only checks FTP Service in the Stateful Packet Inspection section, all incoming traffic will be blocked except for FTP connections initiated from the local LAN.

Configuring the Barricade™ Router

Stateful Packet Inspection allows you to select different application types that are using dynamic port numbers. If you wish to use the Stateful Packet Inspection (SPI) to block packets, click on the Yes radio button in the “Enable SPI and Anti-DoS firewall protection” field and then check the inspection type that you need, such as Packet Fragmentation, TCP Connection, UDP Session, FTP Service, H.323 Service, and TFTP Service.

- **When hackers attempt to enter your network, we can alert you by e-mail** – Enter your E-mail address. Specify your SMTP and POP3 servers, user name, and password.
- **Connection Policy** – Enter the appropriate values for TCP/UDP sessions as described in the following table.

Parameter	Defaults	Description
Fragmentation half-open wait	10 sec	Configures the number of seconds that a packet state structure remains active. When the timeout value expires, the router drops the unassembled packet, freeing that structure for use by another packet.
TCP SYN wait	30 sec	Defines how long the software will wait for a TCP session to synchronize before dropping the session.
TCP FIN wait	5 sec	Specifies how long a TCP session will be maintained after the firewall detects a FIN packet.
TCP connection idle timeout	3600 seconds (1 hour)	The length of time a TCP session will be maintained if there is no activity.
UDP session idle timeout	30 sec	The length of time a UDP session will be maintained if there is no activity.
H.323 data channel idle timeout	180 sec	The length of time an H.323 session will be maintained if there is no activity.

DoS Criteria and Port Scan Criteria

Set up DoS and port scan criteria in the spaces provided (as shown below).

Parameter	Defaults	Description
Total incomplete TCP/UDP sessions HIGH	300 sessions	Defines the rate of newly unestablished sessions that will cause the software to <i>start</i> deleting half-open sessions.
Total incomplete TCP/UDP sessions LOW	250 sessions	Defines the rate of newly unestablished sessions that will cause the software to <i>stop</i> deleting half-open sessions.
Incomplete TCP/UDP sessions (per min.) HIGH	250 sessions	Maximum number of allowed incomplete TCP/UDP sessions per minute.
Incomplete TCP/UDP sessions (per min.) LOW	200 sessions	Minimum number of allowed incomplete TCP/UDP sessions per minute. Set this to "0" if no minimum setting is required.
Maximum incomplete TCP/UDP sessions number from same host	10 sessions	Maximum number of incomplete TCP/UDP sessions from the same host.
Incomplete TCP/UDP sessions detect sensitive time period	300 msec	Length of time before an incomplete TCP/UDP session is detected as incomplete.
Maximum half-open fragmentation packet number from same host	30	Maximum number of half-open fragmentation packets from the same host.

Configuring the Barricade™ Router

Parameter	Defaults	Description
Half-open fragmentation detect sensitive time period	1sec	Length of time before a half-open fragmentation session is detected as half-open.
Flooding cracker block time	300 sec	Length of time from detecting a flood attack to blocking of the attack.

DMZ

The screenshot shows the SMC Advanced Setup interface with the 'Advanced Setup' tab selected. On the left, there's a sidebar with navigation links: System, WAN, LAN, NAT, Firewall (selected), DDNS, UPnP, Tools, and Status. The main content area is titled 'DMZ(Demilitarized Zone)'. It contains a note about opening a local client PC for two-way Internet access by defining a Virtual DMZ Host. There are two radio buttons for 'Enable DMZ': 'Yes' (selected) and 'No'. Below this, a note states that multiple PCs can be exposed to the Internet for two-way communications like internet gaming, video conferencing, or VPN connections. To use the DMZ, a static IP address must be set for that PC. The configuration table has two columns: 'Public IP Address' and 'Client PC IP Address'. The 'Public IP Address' column lists IP addresses from 0.0.0.0 to 0.0.0.8. The 'Client PC IP Address' column lists 192.168.2.0 through 192.168.2.7. At the bottom are 'HELP', 'APPLY', and 'CANCEL' buttons.

Public IP Address	Client PC IP Address
0.0.0.0	192.168.2.0
0.0.0.1	192.168.2.1
0.0.0.2	192.168.2.2
0.0.0.3	192.168.2.3
0.0.0.4	192.168.2.4
0.0.0.5	192.168.2.5
0.0.0.6	192.168.2.6
0.0.0.7	192.168.2.7
0.0.0.8	192.168.2.8

If you have a client PC that cannot run an Internet application properly from behind the firewall, then you can open the client up to unrestricted two-way Internet access. Enter the IP address of a DMZ host to this screen. Adding a client to the DMZ (Demilitarized Zone) may expose your local network to a variety of security risks, so only use this option as a last resort.

DDNS (Dynamic DNS) Settings

Dynamic DNS provides users on the Internet with a method to tie their domain name(s) to computers or servers. DDNS allows your domain name to follow your IP address automatically by having your DNS records changed when your IP address changes.



Domain Name – A symbolic network address for the Barricade™ Router formatted as a series of alphanumeric strings separated by periods.

E-mail – Enter your e-mail address here.

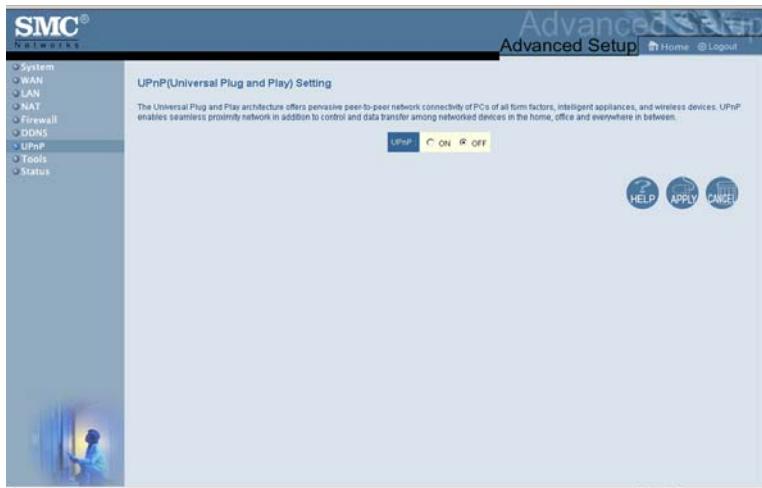
Key – Enter your key here to sign in. If you do not already have a key, click on the Get free 30-day trial key! link.

The section also has a “Server Configuration” section that automatically opens the port options checked in the Virtual Server section. Simply enter in the IP Address of your server, such as a web server, and then click on the port option HTTP Port 80 so users can access your server from the WAN connection (Internet).

Configuring the Barricade™ Router

This DNS feature is powered by TZO.com. With a DDNS connection you can host your own web site, email server, FTP site, and more at your own location even if you have a dynamic IP address. (Default: Disable)

UPnP (Universal Plug and Play) Setting



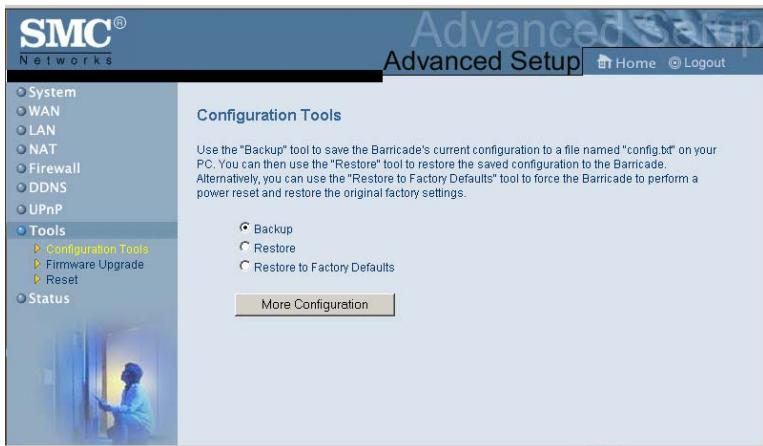
Enable UPnP by checking ON in the screen above. UPnP allows the device to automatically:

- dynamically join a local network.
- obtain an IP address.
- convey its capabilities and learn about the presence and capabilities of other devices.(Default: OFF)

Tools

Use the Tools menu to back up the current configuration, restore a previously saved configuration, restore factory settings, update firmware, and reset the Barricade™ Router.

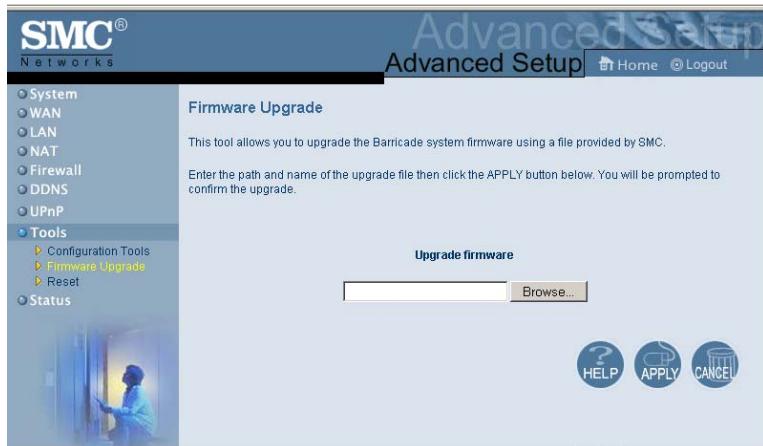
Tools - Configuration Tools



- Backup – saves the Barricade™ Router's configuration to a file.
- Restore – restores settings from a saved backup configuration file.
- Restore to factory defaults – restores the Barricade™ Router settings back to the factory defaults.

Configuring the Barricade™ Router

Tools - Firmware Upgrade



Use this screen to update the firmware or user interface to the latest versions. Download the upgrade file from the SMC Web site (www.smc.com) and save it to your hard drive. Click Browse to look for the downloaded file. Click APPLY. Check the Status page Information section to confirm that the upgrade process was successful.

Advanced Setup

Tools - Reset



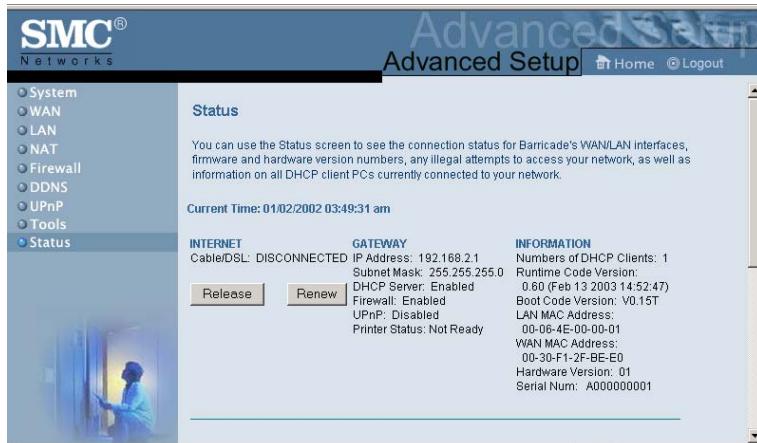
Click **APPLY** to reset the Barricade™ Router. The reset will be complete when the power LED stops blinking.

Note: If you use the Reset button on the front panel, the Barricade™ Router performs a power reset. If the button is depressed for over five seconds, all the LEDs will illuminate and the factory settings will be restored.

Configuring the Barricade™ Router

Status

The Status screen displays WAN/LAN connection status, firmware, and hardware version numbers, illegal attempts to access your network, as well as information on DHCP clients connected to your network.



The following items are included on this screen:

Section	Description
INTERNET	Displays WAN connection type and status.
GATEWAY	Displays system IP settings, as well as DHCP and Firewall status.
INFORMATION	Displays the number of attached clients, the firmware versions, the physical MAC address for each media interface, as well as the hardware version and serial number.
Security Log	Displays illegal attempts to access your network.
Save	Click on this button to save the security log file.
Clear	Click on this button to delete the access log.
Refresh	Click on this button to refresh the screen.
DHCP Client Log	Displays information on all DHCP clients on your network.

PRINT SERVER SETUP

If you want to use the print server built into the Barricade™ Router, then you must first install the Port Monitor program as described in the following section for Windows 95/98/Me/NT/2000.

To configure the Barricade™ Print Server for Windows 95/98/Me/NT/2000, or Unix, see “Configuring the Print Server” on page 78.

Installing the SMC Printer Port Monitor

Skip this section if you are using Unix.

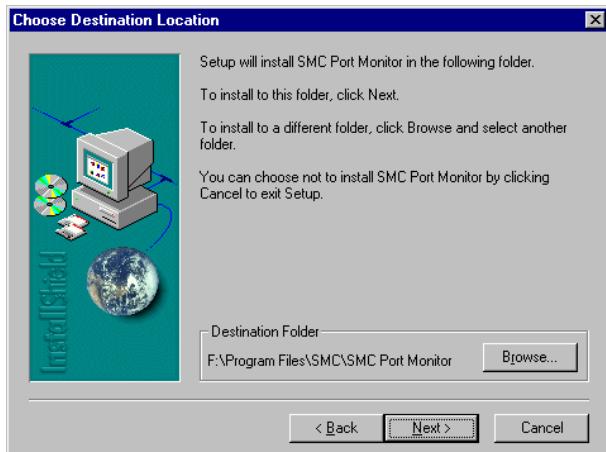
For Windows 95/98/Me/NT/2000 clients, you need to install the port monitor program as described in this section.

1. Insert the installation CD-ROM into your CD-ROM drive. Under the Print Server directory, run the setup.exe program. The SMC Port Monitor installation program advises you to close all other Windows programs currently running on your computer. Click Next to continue.
2. The next screen indicates that the print client uses TCP/IP network protocol to monitor print requests. Click Next.

Print Server Setup



3. Select the destination folder and click on the Next button. The setup program will then begin to install the programs into the destination folder.



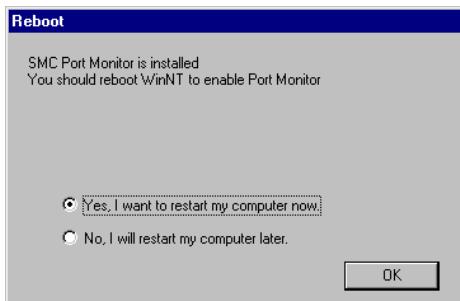
4. Select the Program Folder that will contain the program icon for uninstalling the port monitor, and then click Next.

Installing the SMC Printer Port Monitor

5. Enter the printer port name that will be used to identify the port monitor in your system, and press Next.



6. When the setup program finishes installing the port monitor, check the radio button to restart your computer and then click OK.



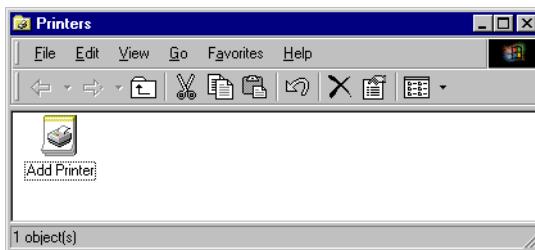
7. After rebooting your computer, add the Barricade™ Router print server to your system as described in the following section.

Configuring the Print Server

The Barricade™ Router's print server supports Microsoft Windows 95/98/Me/NT/2000, and Unix. If you are using Windows 95/98/Me/NT/2000, first install the port monitor as described in the previous section before adding the Barricade™ Router's print server to your operating system.

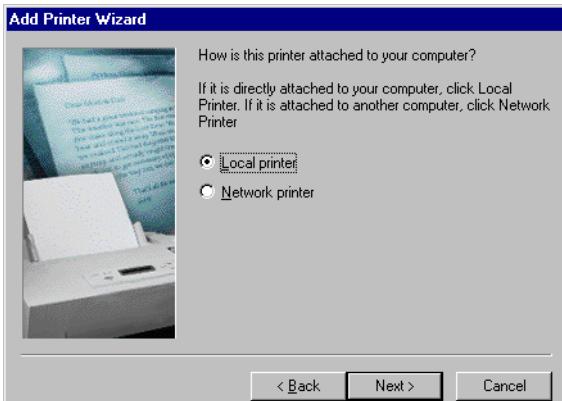
Configuring the Network Printer in Win 95/98/Me/2000

1. On a Windows 95/98/Me/2000 platform, open the Printers window in the My Computer menu, and double-click the Add Printer icon.

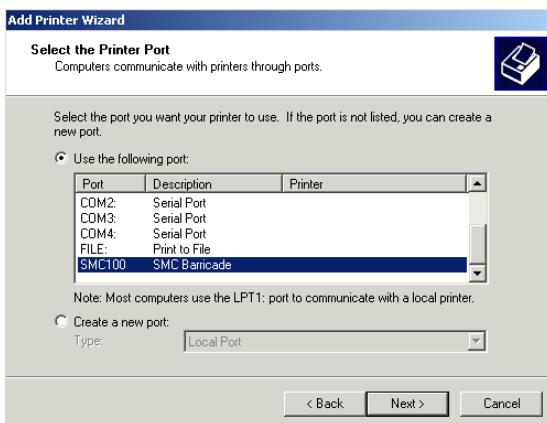


Configuring the Print Server

- Follow the prompts to add a Local printer to your system. Specify the printer type attached to the Barricade™ Router.

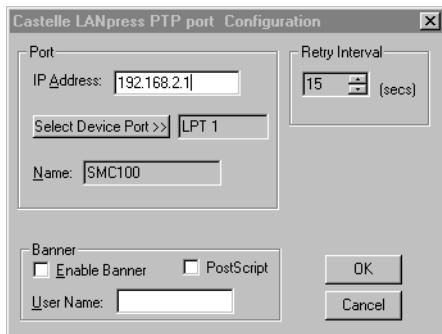


- Click the Use the following port button and select the monitored port (the default port name is SMC100).



Print Server Setup

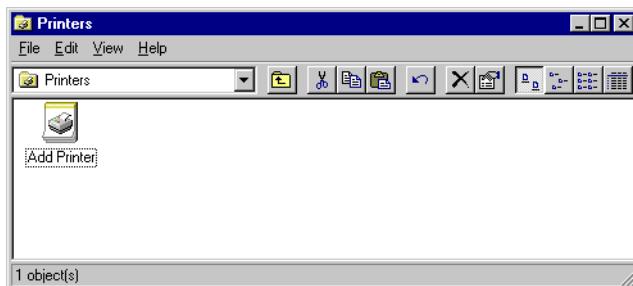
4. Enter the IP address of the Barricade™ Router and click OK, and then click Next in the Add Printer Wizard dialog box.



5. Continue following the prompts to finish installing the Barricade™ Router print server. The printer type you specified will now be added to your Printers menu.

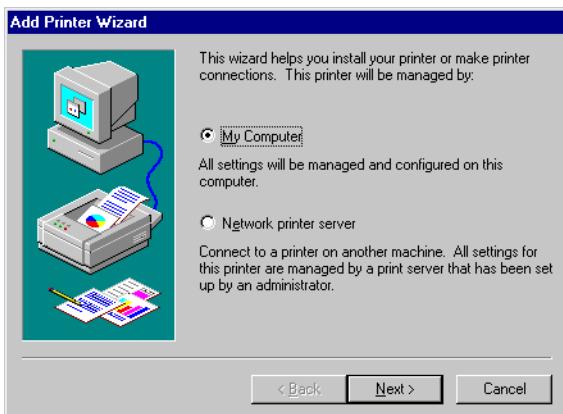
Configuring the Network Printer in Windows NT

1. On a Windows NT platform, open the Printers window in the My Computer menu, and double-click the Add Printer icon.

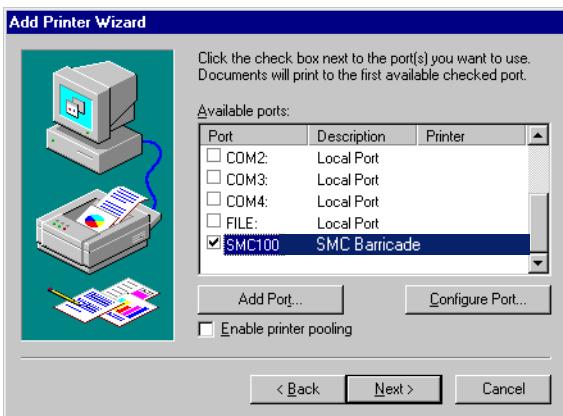


Configuring the Print Server

- Follow the prompts to add a local printer to your system.

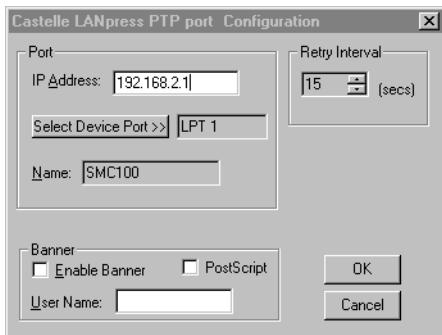


- Select the monitored port. The default port name is SMC100. Then click the Configure Port button.



Print Server Setup

4. Enter the IP address of the Barricade™ Router and click OK, and then click Next in the Add Printer Wizard dialog box.



5. Specify the printer type attached to the Barricade™ Router.
6. Continue following the prompts to finish installing the Barricade™ Router print server. The printer type you specified will now be added to your Printers menu.

Configuring the Network Printer in Unix Systems

Follow the traditional configuration procedure on Unix platforms to set up the Barricade™ Router print server. The printer name is lpt1.

Configuring LPR port on Windows 2000/XP

The Barricade™ Router printer function can also be used with the LPR (Remote Line Printer) port on Windows XP and Windows 2000 machines. Below is an outline on how to configure the LPR port on a Windows 2000 machine; however the same steps will apply for a Windows XP.

1. Open the Control Panel.
2. Click on the Printers and Faxes or Printers icon.

Configuring the Print Server

3. Click on the Add Printer icon to launch the Add Printer Wizard.



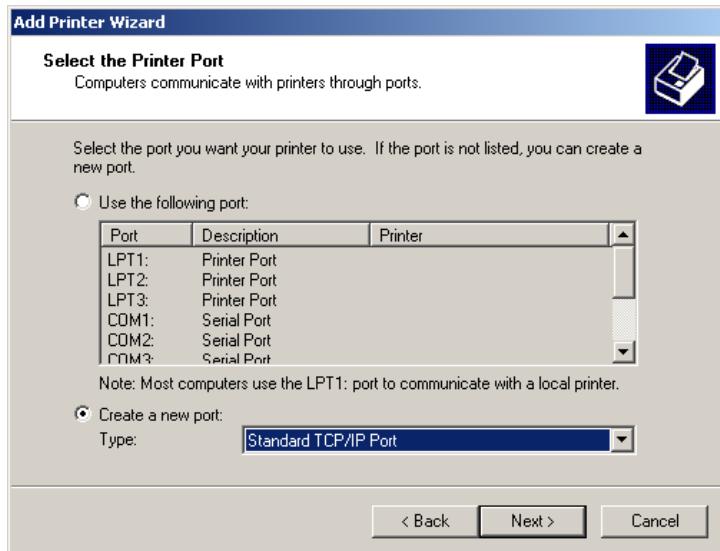
4. Click Next button to begin the printer installation process.
5. On the next dialog box, choose the Local Printer option and verify the "Automatically detect and install my Plug and Play printer" option is unchecked.

Note: On Windows XP check the "Local printer attached to this computer."

6. Click the Next button to create a new printer port.

Print Server Setup

7. Select the Create a New Port option and then select the Standard TCP/IP Port option in the drop-down menu.



Configuring the Print Server

8. When you click the Next button the “Add Standard TCP/IP Printer Port Wizard” will launch.



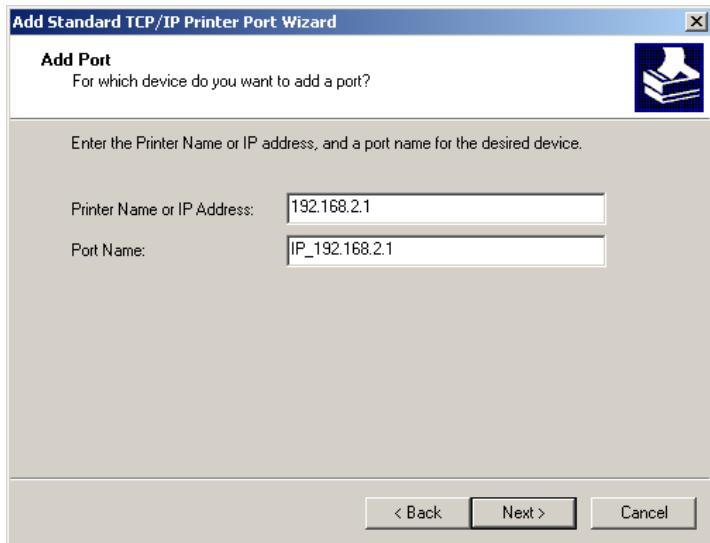
9. To start this new installation wizard click the Next button.

Print Server Setup

10. Provide the appropriate IP and Port name information for your new Printer port. If you are using default settings on the router you can use the following information:

Printer Name or IP Address: 192.168.2.1 Port Name:
IP_192.168.2.

Note: This is the IP that you use to administer your router with (for example: 192.168.2.1). If you have changed this IP address then please use the new one that you have assigned to your router.

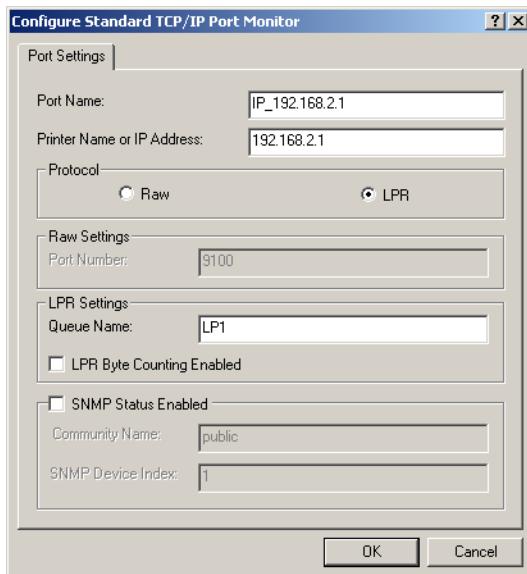


11. Click the Next button to continue.

12. On the next dialog box, under the Device type choose the Custom option.

Configuring the Print Server

13. Then click the Settings... button to input the Specific Barricade™ Printer port information.



14. In the Configure Standard TCP/IP Port Monitor dialog box you will need to configure some additional settings. Please confirm these settings below:

- Port Name: IP_192.168.2.1*
- Printer Name or IP Address: 192.168.2.1*

Note: This should be the same information that was configured in Step 7.

- In the Protocol section click on the LPR option
- The Raw Settings section should be grayed out

Print Server Setup

- The LPR Settings section should have the Queue Name set to one of two options depending on the version of Barricade™ Router you are using.
- The Queue Name is LPT1.
- Verify that the LPR Byte Counting Enabled and SNMP Status Enabled options are unchecked.

15. Once you have verified all of these settings, click the OK button to save these settings and close the “Configure Standard TCP/IP Port Monitor” window.

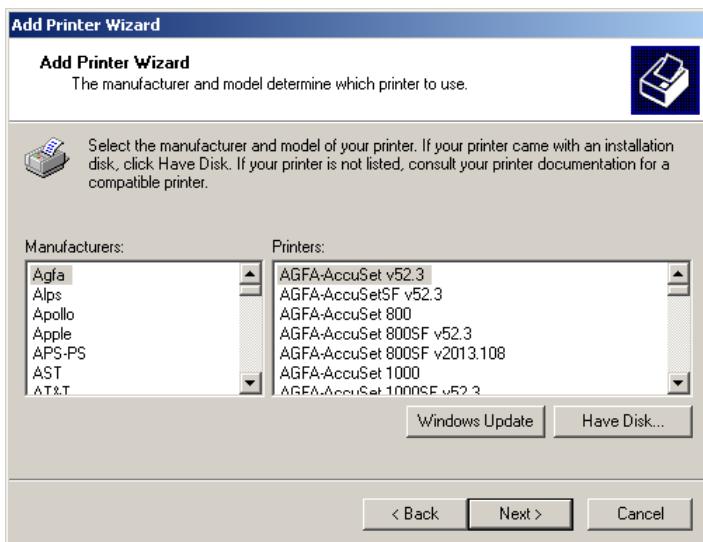
16. Click Next to continue and view a summary of the configuration that you have just completed.

17. Click the Finish button to complete the configuration process of the TCP/IP port

18. The Add Printer Wizard will now guide you through the Printer Driver installation for the LPR port you just installed.

Configuring the Print Server

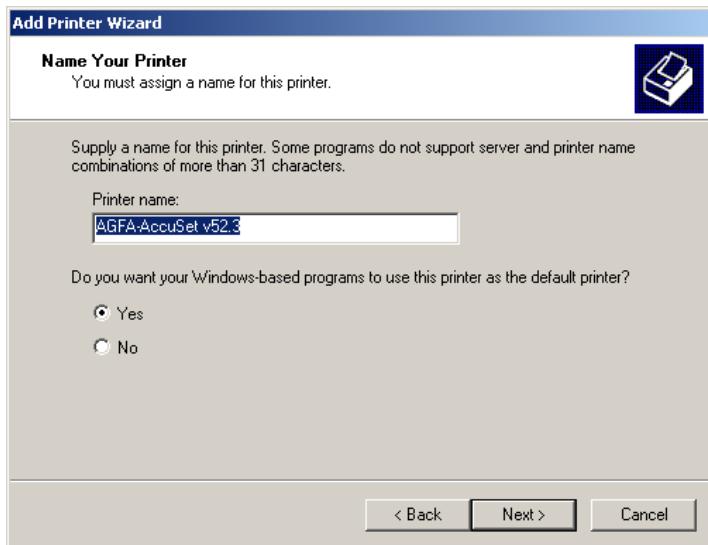
19. In the dialog box below, choose the manufacturer of your printer, and then choose your printer model. If your printer is not listed here, then please refer to your printer documentation to get your printer installed.



20. Once you have your printer selected in this dialog box click the Next button.

Print Server Setup

21. Name your printer. In this dialog box give your installed printer a name. This will be the name used for this printer in your Printer folder.



22. Once you have named your printer, click Next to continue.

23. Choose the “Do not share this printer” option and click the Next button.

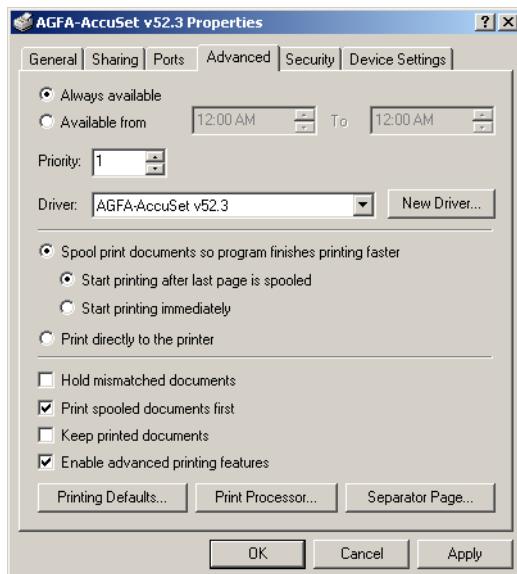
24. Choose No to the “Print Test Page” option, and click the Next button.

25. On the next screen, you should now see a dialog box with a summary of all the printer information that you have just configured. To complete the installation, click the Finish button.

Configuring the Print Server

Once you have completed the printer installation, you will need to configure some properties on your printer. To do so, please follow the steps listed below:

1. If you closed out the Printers window, please re-open it from the control panel.
2. Locate the printer that you just installed, right-mouse click on it, and choose Properties.
3. Click on the Advanced tab and verify the following settings:

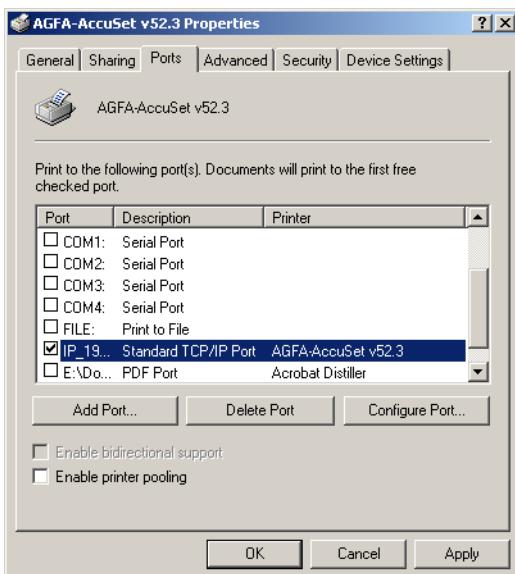


- Both the “Spool print documents so program finishes printing faster” and the “Start printing after last page is spooled” options are selected.

Print Server Setup

- Both the “Print spooled documents first” and “Enable advanced printing features” options are checked.
- All of the other options should be disabled or unchecked.

4. Click on the Ports tab and verify that the TCP/IP port that you just created is selected, and the Enable bidirectional support and Enable printer pooling options are unchecked.



5. Click the Apply button to save the settings.

6. Next click on the General tab and click on the Print Test Page button. This will verify that you have successfully setup your LPR printing port, and now you can print through the SMC Barricade™ Router.

Configuring the Print Server

Confirm printer connection

On the status page of the web-based login, you can confirm the printer connection to the Barricade™ Router.

GATEWAY

IP Address: 192.168.2.1
Subnet Mask: 255.255.255.0
DHCP Server: Enabled
Firewall: Enabled
UPnP: Disabled
Printer Status: OK

TROUBLESHOOTING

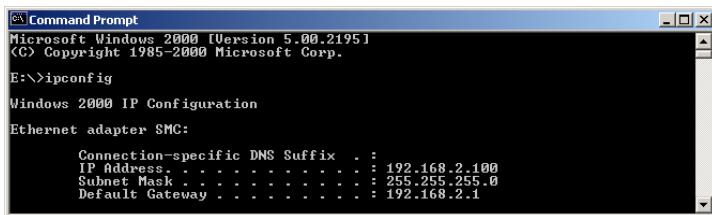
The information outlined in this section describes some useful steps for getting your computer and Barricade™ Router online.

Verify you are connected to the Barricade™ Router

If you are unable to access the Barricade™ Router's web-based administration pages then you may not be properly connected or configured. The screen shots in this section were taken on a Windows 2000 machine, but the same steps will apply to Windows 95/98/Me/XP.

To determine your TCP/IP configuration status please follow the steps below:

1. Click Start/Programs/Accessories/Command Prompt.
2. In the DOS window, type ipconfig and verify the information that is displayed.
3. If your computer is setup for DHCP, then your TCP/IP configuration should be similar to the information displayed:
 - IP Address: 192.168.2.X (where x is a number between 100 and 199)
 - Subnet Mask: 255.255.255.0
 - Default Gateway: 192.168.2.1



```
EX Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

E:\>ipconfig

Windows 2000 IP Configuration

Ethernet adapter SMC:

Connection-specific DNS Suffix . :
IP Address . . . . . : 192.168.2.100
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . : 192.168.2.1
```

Troubleshooting

If you have any other IP address information listed see below.

If you have an IP address that starts with 169.254.XXX.XXX then see the next section.

If you have another IP address configured, then see the section "I have another IP Address displayed" on page 97.

I am getting an IP Address that starts with 169.254.XXX.XXX

If you are getting this IP Address, then you need to check that you are properly connected to the Barricade™ Router.

Confirm that you have a good link light on the Barricade™ Router for the port to which this computer is connected. If not, please try another cable.

If you have a good link light, please open up a DOS window as described in the previous section and type ipconfig/renew.

If you are still unable to get an IP Address from the Barricade™ Router, reinstall your network adapter. Please refer to your adapter manual for information on how to do this.

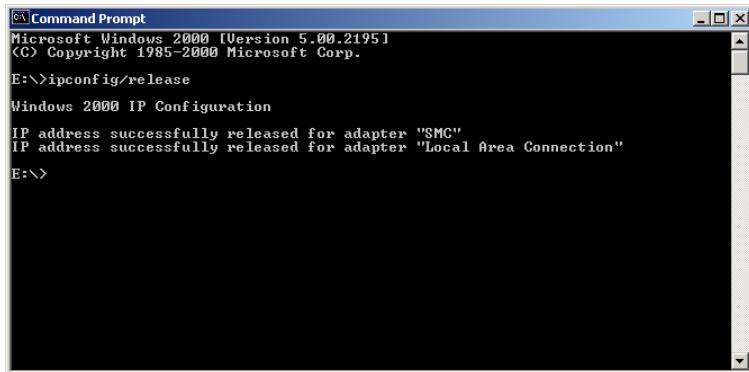
Troubleshooting

I have another IP Address displayed

If you have another IP address listed then the PC may not be configured for a DHCP connection. Please refer to "Configuring Client TCP/IP" on page 11 for information.

Once you have confirmed that your computer is configured for DHCP, then please follow the steps below.

1. Open a DOS window as described above.
2. Type ipconfig/release.



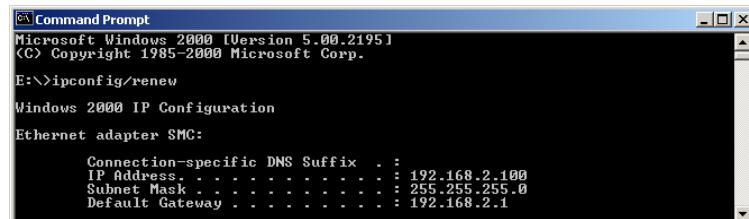
```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

E:\>ipconfig/release
Windows 2000 IP Configuration

IP address successfully released for adapter "SMC"
IP address successfully released for adapter "Local Area Connection"

E:\>
```

3. Then type ipconfig/renew.



```
Command Prompt
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-2000 Microsoft Corp.

E:\>ipconfig/renew
Windows 2000 IP Configuration

Ethernet adapter SMC:

      Connection-specific DNS Suffix  . : 
      IP Address . . . . . : 192.168.2.100
      Subnet Mask . . . . . : 255.255.255.0
      Default Gateway . . . . . : 192.168.2.1
```

Troubleshooting

Symptom

The 10/100 LED does not light after a connection is made.

Possible Solutions

- Check that the host computer and router are both powered on.
- Be sure the network cable is connected to both devices.
- Verify that Category 5 cable is used if you are operating at 100 Mbps, and that the length of any cable does not exceed 100 m (328 ft).
- Check the network card connections.
- The 10BASE-T/100BASE-TX port, network card, or cable may be defective.

SPECIFICATIONS

Below is an outline of the Technical Specifications for the Barricade™ Router 4-Port Cable/DSL Broadband Router (SMC7004ABR)

Standards

IEEE 802.3 10BASE-T Ethernet

IEEE 802.3u 100BASE-TX Fast Ethernet

IEEE 802.11b

LAN Interface

4 - RJ-45 10/100 Mbps Auto MDI/MDI-X ports

WAN Interface

1- RJ-45 10/100 Mbps Auto MDI/MDI-X port

Serial, 1 RS-232 DB-9 connector

Printer Interface

Parallel – 1 DB-25 printer port

Management

Web management

Advanced Features

Dynamic IP Address Configuration – DHCP, DNS

Firewall – Client privileges, hacker prevention and logging

Virtual Private Network – PPTP, L2TP, IPSec pass-through

Backup Internet Connection – Dial-on-demand via secondary
WAN port

Printer server

Indicator Panel

Power

WAN: Link/Activity

LAN: Link/Activity, 10/100 (Mbps)

Specifications

Temperature

Operating: 0 to 40 °C (32 to 104 °F)

Storage: -20 to 70 °C (-4 to 158 °F)

Humidity

5% to 95% (noncondensing)

Dimensions

19.05 x 11.43 x 3.31 cm (7.5 x 4.5 x 1.3 in.)

Weight

340 g (12 oz)

Input Power

12 V (1 A)

Power

12 Watts max. @ 100/240 V AC

Heat Dissipation

41 BTU/hour

Internet Standards

ARP (RFC 826), IP (RFC 791), ICMP (RFC 792), UDP (RFC 768), TCP (RFC 793), Telnet (RFC 854-859), MD5 (RFC 1321), BOOTP Extension (RFC 1497), PPP LCP Extension (RFC 1570), PPPoE (RFC 2516), NAT (RFC 1631), PPP (RFC 1661), HTML (RFC 1866), HTTP (RFC 1945), CHAP (RFC 1944), DHCP (RFC 2131), PPTP (RFC 2637)

Compliances

CE Mark

Emissions

FCC Class B

VCCI Class B

Industry Canada Class B

EN55022 (CISPR 22) Class B

C-Tick - AS/NZS 3548 (1995) Class B

Immunity

EN 61000-3-2/3

EN 61000-4-2/3/4/5/6/8/11

Safety

UL 1950

EN60950 (TÜV)

CSA 22.2 No. 950

COMPLIANCES

FCC - Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Industry Canada - Class B

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus" ICES-003 of the Department of Communications.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe B prescrites dans la norme sur le matériel brouilleur: « Appareils Numériques » NMB-003 édictée par le ministère des Communications.

Compliances

EC Conformance Declaration - Class B

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Fructuós Gelabert 6-8, 2^o, 4^a,
08970 - Sant Joan Despí,
Barcelona, Spain.

This information technology equipment complies with the requirements of the Council Directive 89/336/EEC on the Approximation of the laws of the Member States relating to Electromagnetic Compatibility and 73/23/EEC for electrical equipment used within certain voltage limits and the Amendment Directive 93/68/EEC. For the evaluation of the compliance with these Directives, the following standards were applied:

RFI	* Limit class B according to EN 55022:1998
Emission:	* Limit class B for harmonic current emission according to EN 61000-3-2/1995 * Limitation of voltage fluctuation and flicker in low-voltage supply system according to EN 61000-3-3/1995
Immunity:	* Product family standard according to EN 55024:1998 * Electrostatic Discharge according to EN 61000-4-2:1995 (Contact Discharge: ±4 kV, Air Discharge: ±8 kV) * Radio-frequency electromagnetic field according to EN 61000-4-3: 1996 (80 - 1000 MHz with 1 kHz AM 80% Modulation: 3 V/m) * Electrical fast transient/burst according to EN 61000-4-4:1995(AC/DC power supply: ±1 kV, Data/Signal lines: ±0.5 kV) * Surge immunity test according to EN 61000-4-5:1995(AC/DC Line to Line: ±1 kV, AC/DC Line to Earth: ±2 kV) * Immunity to conducted disturbances, Induced by radio-frequency fields: EN 61000-4-6:1996(0.15 - 80 MHz with 1 kHz AM 80% Modulation: 3 V/m) * Power frequency magnetic field immunity test according to EN 61000-4-8:1993(1 A/m at frequency 50 Hz) * Voltage dips, short interruptions and voltage variations immunity test according to EN 61000-4-11:1994(>95% Reduction @10 ms, 30% Reduction @500 ms, >95% Reduction @5000 ms)
LVD:	* EN60950(A1/1992; A2/1993; A3/1993; A4/1995; A11/1997)

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* Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

Full Installation Manual

Full installation manuals are provided on the Installation CD-Rom. Manuals in other languages than those included on the CD-Rom are provided on www.smc-europe.com (section support).

Firmware and Drivers

For latest driver, technical information and bug-fixes please visit www.smc-europe.com (section support).

Contact SMC

Contact details for your relevant countries are available on www.smc-europe.com and www.smc.com.

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Model Number: SMC7004ABR V.2